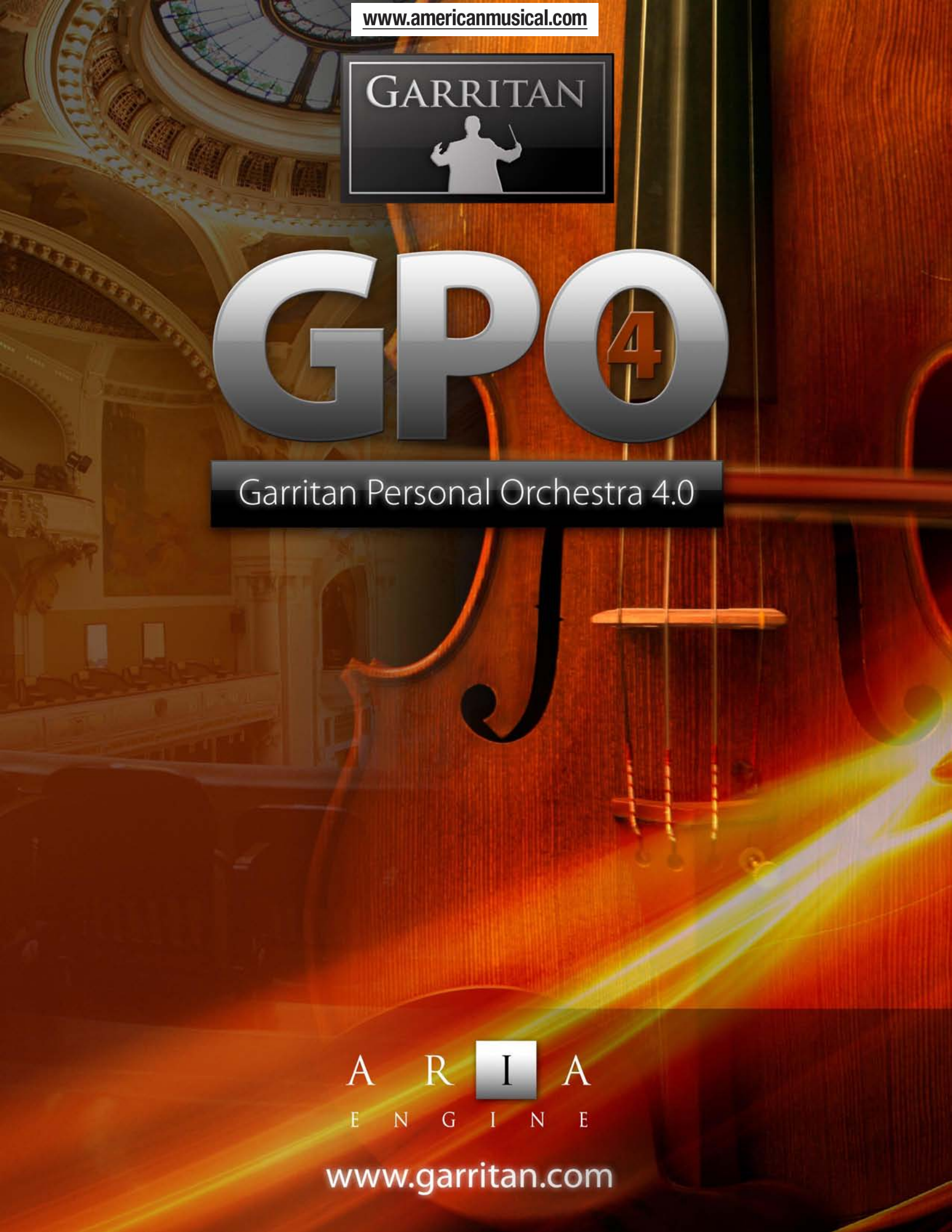
www.americanmusical.com



www.americanmusical.com

A Guide to

GARRITAN PERSONAL ORCHESTRA®

Version 4

www.americanmusical.com

A Guide to

GARRITAN PERSONAL ORCHESTRA® Version 4

Including the ARIA™ Player
And including ProjectSAM sounds

Copyright © 2010 by Garritan Corp. All rights reserved.

This guide written by: Gary Garritan and Tom Hopkins

Produced by:	Gary Garritan
Director of Programming:	Tom Hopkins
ARIA Engine Development:	Plogue Art et Technologie Inc
Additional Programming:	Eric Patenaude, Jeff Hurchalla
Document Editing:	David Sosnowski and the Extraordinary Team of Beta Testers
MIDI Programming:	Markleford Friedman
Art Direction:	James Mireau
Project Management:	Max Deland
Select Brass Samples:	Project SAM

Garritan Personal Orchestra® is a registered trademark of Garritan Corp. Use of the Garritan Personal Orchestra® library and the contents herein are subject to the terms and conditions of the license agreement distributed with the library. You should carefully read the license agreement before using this product. The sounds presented in Garritan Personal Orchestra® are protected by copyright and cannot be distributed, whether modified or unmodified. The Guide to Garritan Personal Orchestra and instrument lists contained herein are also covered by copyright. ARIA™ is a trademark of Garritan and Plogue Art et Technologie Inc. Finale is a trademark of MakeMusic, Sibelius a trademark of Avid Corporation, Steinway™ is trademark of Steinway & Sons, and any other trademarks of third-party programs are trademarks of their respective owners. No part of this publication may be copied, reproduced or otherwise transmitted or recorded, for any purpose, without prior written permission by Garritan Corporation. The information contained herein may change without notice and does not represent a commitment on the part of Garritan Corporation.

Garritan Personal Orchestra
Garritan Corporation
P.O. Box 400, Orcas, WA 98280 USA
e-mail: info@garritan.com

Visit us on the World Wide Web at: **www.garritan.com**

Table of Contents

Welcome to Personal Orchestra 6
Features of the Garritan Personal Orchestra 7
What is Personal Orchestra? 8
Uses for the Garritan Personal Orchestra 8
End User License Agreement 9
What's Included 10
How to Use This Manual 10
Further Documentation and Resources 11
Specifications & Computer System Requirements 11
Regarding Sound Cards & Midi Interfaces 13
Regarding Speakers, Amplification and Headphones 14
Regarding 64-bit Computing 14
INSTALLATION 16
Installing Garritan Personal Orchestra 17
Mac Setup (For Windows Setup see next Section) 17
Windows Setup: 21
1. The Garritan Personal Orchestra Setup Wizard 21
2. The ARIA Engine Installer 25
3. The ARIA Player Installer 25
4. The Garritan Personal Orchestra 4 Sound Library Installer 26
ACTIVATION 30
Activating Garritan Personal Orchestra 4 31
Log onto the Garritan Registration Site 32
Product Registration: Enter Your Serial Number: 33
The Activation Keycard 35
Final Step: Activating Garritan Personal Orchestra 4 35
Updating to Latest Version 38
HOW TO USE GARRITAN PERSONAL ORCHESTRA 40
How to Use Garritan Personal Orchestra 41
Playing the Garritan Personal Orchestra as a Standalone Application ('Live' Play) 41
Launching the Garritan Personal Orchestra in Standalone Mode 41
Basic Setup Information for Standalone Mode 41
File Menu for Loading and Saving Presets in the Standalone 43
Tools Menu—Standalone Mode ONLY 43
MIDI File Player and Audio Recorder (Standalone Version Only) 45
Using Garritan Personal Orchestra as an Instrument Plug-In 46
Basic Setup Information for Using the Garritan Personal Orchestra as a Plug-In Instrument 47
Using Garritan Personal Orchestra in a Specific Music Program or Sequencer 47
Saving Personal Orchestra Parameters in a Music Program or Sequencer 48
VST Expression Support 49
Using Garritan Personal Orchestra with a Notation Program 49

HOW THE ARIA PLAYER WORKS 50
How the Garritan Aria Player Works 51
The Basic Interface and the View Screens 51
The Mixer Window 52
Controls Window 53
Effects Window 58
Settings Window 62
PLAYING GARRITAN INSTRUMENTS 64
Playing Garritan Instruments 63
Basic Controls (Brass, Wind and String Instruments from Personal Orchestra) 63
The Real-Time Control System (for Brass, Winds and Strings) 63
1. Modulation Wheel Control (Volume and Expression for Sustain Instruments) 64
2. Note Velocity (Attack for Sustain Instruments/ Volume for Percussive Instruments) 68
3. Sustain Pedal (Legato for Sustain Instruments / Sustain for Percussive Instruments) 68
4. Keyswitching (Changing Articulations and Techniques In Real-Time) 71
5. Other Controls 72
Putting It All Together for a Real-Time Performance 74
Building Sections from Individual Instruments 75
An Overview of the Orchestra 76
String Instruments 78
The Woodwind Instruments 83
The Brass Instruments 88
The Percussion Instruments 93
The Keyboard Instruments and the Harp 98
LIST OF INSTRUMENTS 103
Directory of Instruments in Personal Orchestra 105
Ensemble Files 146
CODA 150
Conclusion 151
Getting Help 152
The Garritan Community 153
Acknowledgments 154
Downloadable Sounds! 155
ADDENDUM 155
Appendix A: Quick MIDI Controller Reference Guide for Personal Orchestra 157
Downloadable Sounds and Other Garritan Products 160
Free Interactive Orchestration Course 161

Welcome to Personal Orchestra

We have all cherished the sound of a symphony orchestra. Orchestral music is everywhere around us—in the movies, on television, in interactive games, live performances, radio and in public venues. It is hard to escape the power and influence that orchestral music has. What makes orchestral music so expressive and vibrant is its wide variety of instruments. Each and every instrument has a unique sound capable of expressing the entire range of human emotion. When played together, the instruments blend into a wonderful symphony of sound.

Sometimes we might even wonder how it feels to conduct an orchestra or how our music would sound in the hands of a capable orchestra. New computing and sampling technology now makes this possible. With Personal Orchestra the grandeur of a symphony is at your command.

Personal Orchestra has become a standard in the industry and has brought digital orchestration within reach of almost all musicians. We are pleased to offer this fourth edition with the new ARIA sample engine, new instruments (including the renowned Project SAM Brass) and new programming.

Garritan Personal Orchestra is a dynamic library that is evolving and growing. Please check our website at **www.garritan.com** for the latest up-to-date information, updates, FAQs, troubleshooting, helpful hints and tutorials.

My goal is to bring the power and majesty of a full symphony orchestra into the hands of any musician who has wanted to enhance their music. It is my hope that Personal Orchestra will enable you to make great music and that it will enrich your life.

Yours in music,

Features of the Garritan Personal Orchestra

1. **A Complete Orchestra at your Fingertips**—Garritan Personal Orchestra is an award-winning orchestral library that has become the industry standard. Affordable, easy-to-use and comprehensive. It includes all the major instruments of the orchestra—strings, brass, woodwinds, percussion and keyboards.

2. **Highest Quality Orchestral Instruments**—includes the highest quality collection of orchestral instruments ever sampled. Quality instruments such as a Steinway® grand piano, Stradivari and Guarneri violins, concert harps, celesta, concert pipe organ, and many other fine instruments.

3. **No Sampler Required—**The entire orchestral library is integrated into the ARIA Player and works as a virtual instrument. No need to purchase a separate sampler.

4. **Easy-to-Use—**Create great-sounding orchestral music quickly and easily. Just load your instruments and play. Standardized controls allow you to become familiar with the library quickly and master all the instruments easily. Play articulations in **real-time** and get expressive human-sounding performances. Express your musical ideas fast and with minimal effort.

5. **Ensemble Making**—Garritan Personal Orchestra provides individual instruments from which you can build your own ensembles and sections the way you want. Construct solos, duos, trios, quartets, chamber groups, ensembles, sections, or a full symphony orchestra**.**

6. **Notation Integration to Play from the Score**—You can play your orchestrations directly from the score of supported notation programs.

7. **Universal Format**—Supports all popular formats, Mac and PC, as a standalone program or as a plug-in (VST, RTAS, and OSX AudioUnits), and works with supported notation programs. An entire orchestra can be loaded on a single PC or laptop.

8. **Suited for Everybody**—Professional film composers can use this collection for quick orchestral sketches and capturing creative ideas. Hobbyists can use it for adding orchestrations to their tracks. Educators and students can use it for scoring projects or studying orchestration. Imagine orchestrating at the beach, or on a plane, or anywhere!

What is Personal Orchestra?

Garritan Personal Orchestra is state-of-the-art software that reproduces the sounds of a symphony orchestra. It has set the standard for orchestral sample libraries.

At its core, Garritan Personal Orchestra contains samples of many meticulously recorded orchestral instruments. Personal Orchestra integrates a uniquely powerful and high-performance specialized software sampler designed by Plogue Art et Technologie Inc. More than just sampling, the ARIA instrument engine includes specially tailored acoustic programming designed to reproduce the sounds of real orchestral instruments.

The included ARIA player can work as a standalone or as a plug-in for most major sequencing audio programs and supported notation programs.

Uses for the Garritan Personal Orchestra

- Music composition and arrangement
- Home and project recording studios to provide symphonic orchestral sounds
- A tool with which to learn orchestration in schools, music colleges and conservatories
- Working on scores and parts before committing to a real orchestra
- When accompaniment is needed for practice
- Rehearsal before a performance
- Live performance
- A portable instrument for playing with friends or on stage

Our goal is to bring the rich sound of an orchestra to as many musicians as we can with the highest degree of realism possible on current home computer hardware. We believe, however, that no matter how technologically advanced software instruments may become, no virtual simulation can ever replace a real orchestra. It is our hope that this software orchestra will lead people to consider working with real orchestras and real musicians.

End User License Agreement

Please read the terms of the following software licensing agreement before using this software. By installing and loading these products on your computer you acknowledge that you have read this license agreement, understand the agreement, and agree to its terms and conditions. If you do not agree to these terms and conditions, do not install or use the sounds contained herein. This is the complete agreement between you and Garritan Corporation that supersedes any other representations or prior agreements, whether oral or in writing.

An important thing to understand is that YOU ARE OBTAINING A LICENSE FOR YOUR USE ONLY—THE SOUNDS DO NOT BELONG TO YOU. The implications are described below. The sounds, samples and programming in the Garritan Personal Orchestra remain the sole property of Garritan Corp. and are licensed (not sold) to you.

What You May Do: You can use these sounds in recordings, music productions, public performances, and other reasonable musical purposes within musical compositions. You can use these sounds in your own musical compositions as much as you like without any need to pay Garritan Corporation or obtain further permission. If you do use these sounds, we ask that in any written materials or credits accompanying your music that utilizes material from the Garritan Personal Orchestra (CD booklet, film credits, etc.), that you include the following courtesy credits: *"Instrument samples used in this recording are from the Garritan Personal Orchestra"*—or a similar credit where practicable. You are allowed a maximum of four (4) installations per purchase.

What You May Not Do: The enclosed sounds cannot be re-used in any commercial sample library or competitive product. You are absolutely forbidden to duplicate, copy, distribute, transfer, upload, download, trade or loan this software or any of the contents in any way to anyone. You cannot redistribute this product in whole or in part through an archive, collection, through the Internet, or a binaries group, newsgroup, or any type of removable media, or through a network. You cannot resell the product without written permission and payment of an additional fee. The sounds and samples contained within this software cannot be edited, modified, digitally altered, re-synthesized or manipulated without direct written consent from Garritan Corporation.

Disclaimers and Conditions: A right to use the Garritan Personal Orchestra is granted to the original end-user only, and this license is not transferable unless there is written consent from Garritan Corporation and payment of an additional fee. The sounds of the Garritan Personal Orchestra will only work with the bundled Garritan ARIA Player and will not work with any other sampler. Licensor will not be responsible if the content of this disc does not fit the particular purpose of the Licensee. Please make sure before installing this item that it meets your needs. Information contained herein is subject to change without notice and does not represent a commitment on the part of Garritan Corporation. The sounds are licensed "as is" without warranties of any kind. Neither Garritan Corporation, nor any agent or distributor can be held responsible for any direct or indirect or consequential loss arising from the use of this product in whatever form. The Aria Engine is covered by the installer's End User License Agreement and is incorporated by reference. The Garritan Personal Orchestra may not be returned for any reason other than manufacturing defects. The terms of this license shall be construed in accordance with the substantive laws of the United States of America and the State of Washington. The user agrees to read the manual before seeking technical support and to make sure his or her system meets the recommended requirements. There are no refunds whatsoever on downloadable products.

What This Package Includes

This 4th Edition of Personal Orchestra includes the following:

- Download file (or 1 DVD) containing the complete Personal Orchestra software, and integrated ARIA Advanced Instrument Engine.
- A unique serial number so that you can register the product. Don't lose this—store it in a safe place!
- A complete PDF User's Manual and a Getting Started Guide.

Before you begin installation, make sure you have read the End User License Agreement in the pages that follow. By installing the software you are indicating you agree to the terms of the license.

How to Use This Manual

The goal of this manual is to help you learn how to use Garritan Personal Orchestra. Although many dislike reading manuals, if you wish to get the most out of this new library it is absolutely essential to read this manual. Doing so will help you understand how to use this software library. The operation of many of the essential features is not obvious in casual use and we realize many users are not music technologists. We'll do our best to make this easier for you. We have attempted to make this manual easy to read and have provided information about the various instruments, playing techniques, and modes of control. And, of course, by no means can orchestration or performance techniques be taught from this or any other manual. You can refer to this manual whenever you wish. This manual is provided in digital form as an Adobe Acrobat document file (also known as a PDF) which can be viewed on a computer monitor or printed. If you do not have the Adobe Acrobat Reader, it is available free from **www.adobe.com**. A digital manual is eco-friendly and can be easily updated. If you have a desire to have a paper copy, you can print this document. A printed copy can be a handy reference.

The easiest way of obtaining the information you seek is to use the Bookmarks pane along the left side of this PDF document. By opening the Bookmarks pane, you can go to the various topics from the section names. With a PDF document, you can also zoom in to make the page larger to see more details, or zoom out to see multiple pages at once.

Further Documentation and Resources

For the latest information including updated documentation, pleasevisit our support pages at: www.garritan.com. There you can find updated information, corrections or additions to this manual, FAQ pages answering common questions, suggestions from the users of Garritan software, and news about upcoming Garritan releases. You can also visit the Garritan Forums for up-to-date information. The address is: **www.garritan.com/forums**. Please send any reports of errors in this manual or suggestions for improvement to info@garritan.com.

Specifications & Computer System Requirements

The following table lists the computer and hardware requirements for using the Garritan Personal Orchestra. You can use the Garritan Personal Orchestra on most any modern personal computer that meets the specifications listed below. The specifications provide the minimum standards. For optimal functioning, it is recommended you have a powerful enough computer with a fast CPU processor, a fast hard drive, and a large amount of RAM. The ARIA audio engine is designed to make use of the processing power of your computer's CPU. The powerful and complex algorithms of the ARIA Player work best on modern CPUs. We think that's a small price to pay for the results you will get. Please also observe the systems requirements of your host application, notation program, and/or sequencing program if applicable. Please see the Garritan forum or website if you are looking for recommendations or for more information.

Computer System Requirementsts

Computer	*Operating System*	*Hardware*
Windows PC	Microsoft Windows XP (SP2 or SP3 recommended) Microsoft Windows Vista 32 Microsoft Windows Vista 64 	• 2.8 Ghz CPU Pentium 4 or better, 2.0 Ghz Core 2 Duo or better recommended • 1 GB Minimum, 2 GB RAM recommended to play the entire orchestra. There is a direct correlation between the number of instruments that can be loaded and the amount of available RAM. • 3.5 GB of free hard drive space • Hard drive speed of at least 7200 RPM preferred • Internet connection for download version, DVD ROM drive required for boxed version installation • Monitor with 1,024x768 resolution or better • A sound card compatible with ASIO, DirectSound, or MME • Keyboard: A MIDI interface may be required if you are using a MIDI keyboard. Some keyboards use USB. The Mod Wheel on the keyboard controls volume so make sure to move it up to an audible level. If you do not have a Mod Wheel, then have the ability to assign the controller within your notation program or sequencer or to an external controller. • High-quality speakers and amplifier, or high-quality headphones • Internet connection for download, updates, and online registration
Mac	Mac OS X 10.4 minimum (universal binary minimum) 	• Mac Intel; 2.8 Ghz CPU Pentium 4 or better, 2.0 Ghz Core 2 Duo or better recommended • 2 GB RAM recommended to play the entire orchestra. There is a direct correlation between the number of instruments that can be loaded and the amount of available RAM. • 3.5 GB of free hard drive space • Hard drive speed of at least 7200 RPM preferred • Internet connection for download version, DVD ROM drive required for boxed version installation • Monitor with 1,024x768 resolution or better • A sound card compatible with Core Audio • A MIDI interface may be required if you are using a MIDI keyboard. Some keyboards use USB. The Mod Wheel on the keyboard controls volume so make sure to move it up to an audible level. If you do not have a Mod Wheel, then have the ability to assign the controller within your notation program or sequencer or to an external controller • High-quality speakers and amplifier, or hig- quality headphones • Internet connection for download, update,s and online registration

The stated requirements represent minimum guidelines for the Standalone Garritan Aria Player. If you are using the Garritan Personal Orchestra within a host music program, then there may be other additional resource requirements. Please also observe the system requirements of your host application, notation program, and/or sequencing program if applicable. The demands of various other processing software (including the sequencer, audio and effects processors, other plug-ins, and so on) can affect functionality.

Regarding Sound Cards & MIDI Interfaces

The quality of the audio interface will have a significant effect on the quality of the sound you will hear from Garritan Personal Orchestra. It will also have a substantial effect on performance (both latency and polyphony). Therefore, a good sound card is one of the most important components in optimizing the sound and performance of Garritan Personal Orchestra.

In theory, any audio or sound interface which the manufacturer supports for your operating system and computer, and that has good drivers—should work. However, you are unlikely to get the best sonic results from a sound card designed for computer games or system sounds. Most computers come with a consumer-grade sound card, and we recommend that you get a good quality sound interface beyond that which is built into your computer. Older SoundBlaster sound cards (which do not support multiple sample rates) and gamer-oriented or home system sound cards may be problematic. It is not possible for us to test all built-in or third-party sound cards, and some interfaces do have problems on some platforms; so please see the specifications page on the Garritan website if you are considering buying a new sound card to run Garritan Personal Orchestra.

Technical Info

A low-latency audio interface with ASIO 2.0 or WDM/WaveRT(Windows), or Core Audio (Mac), drivers is required for Personal Orchestra to work as a standalone program. These drivers are normally installed with the audio interface, or the most recent versions can be acquired from the manufacturer's website. Contact the manufacturer of your interface for more information. The drivers should be set to a buffer size of 256 samples (optimal) or 512 (more latency, but less CPU load) and 44100Hz Sampling Rate.

Please note:

When Garritan Personal Orchestra is running as a plug-in, it uses the audio driver selected by the host's setup. If the host (typically your sequencer or notation program) is set up properly and works well, then the Personal Orchestra plug-in should pass through the same audio and MIDI setup. For this information, please refer to your sequencer's, notation program's, or host's manual.

Similarly, any MIDI interface the manufacturer supports for your system should work with Garritan Personal Orchestra.

Regarding Speakers, Amplification and Headphones

Amplifiers and speakers or headphones are needed to listen to the audio output that Garritan Personal Orchestra produces through the computer's audio or sound card(s).

The quality of the audio amplifiers and speakers is extremely important; there is little point in expending a great deal on high-end computer systems and an audio interface—and using inferior personal computer speakers.

Regarding 64-bit Computing

Garritan Personal Orchestra is 64-bit compatible and takes full advantage of the new 64-bit operating systems, processors and hardware that are now available. The Garritan ARIA Player is also fully 32-bit compatible. At this writing, 64-bit computing is entering the marketplace; but 64-bit hosts, audio and MIDI drivers have not fully penetrated the market. To be true 64-bit the entire audio path must be 64-bit, including sampler, host, operating system, audio, and MIDI hardware. As more hosts, operating systems and hardware become 64-bit enabled, Garritan Personal Orchestra will work with those 64-bit platforms. Please also consult the Garritan website for further information and updated recommendations. Currently GPO4 works with Windows 64 bit, but not yet with Mac 64 bit OS.

INSTALLATION

Installing Garritan Personal Orchestra

Installing Garritan Personal Orchestra is easy. Before you begin, make sure your system meets or exceeds the system requirements and that there is enough room on your hard drive to contain all the samples. The full installation requires approximately three gigabytes of free hard disk space. Installation involves installing the Personal Orchestra instrument samples as well as the advanced ARIA instrument engine. A setup program will guide you through the process step-by-step.

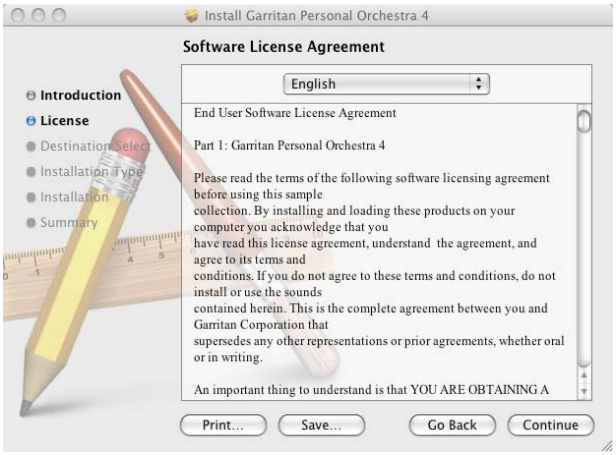
3 Steps for Installing Garritan Personal Orchestra 4

- **Step 1. ARIA Engine Installation**
- **Step 2. ARIA Player Installation**
- **Step 3. GPO4 Sound Library Installation**

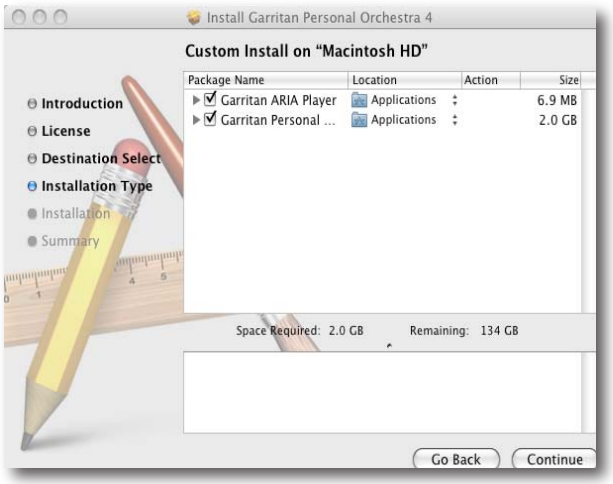
Mac Setup (For Windows Setup See Next Section)

- First, make sure your audio and MIDI hardware are set up and working with your computer. Also close any programs you are running.
- For the Download version of Personal Orchestra, the Mac Archive Utility will unpack this to your default downloads directory.
- Double click on MAC_Garritan_Personal_Orchestra_4.mpkg. Accept the defaults on the installer. For DVD versions of Personal Orchestra, take the Installation disc out of its case, put it into your DVD drive in the computer and close the drive tray.
- Double click on the DVD icon, then on the installer.

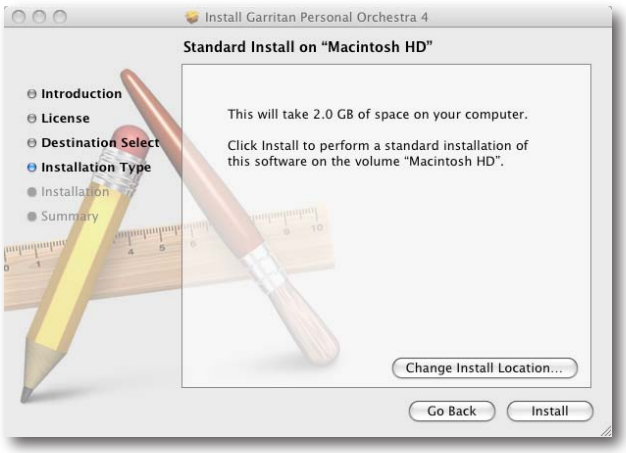
- If the setup screen does not automatically appear: Use the Apple Finder (Mac) to open the installation DVD; or for Download users. Double click on MAC_Garritan_Personal Orchestra_4.mpkg then double-click the Installer Icon.
- You will then be asked to fill out your name and to read and accept the End User License Agreement before proceeding with the installation.



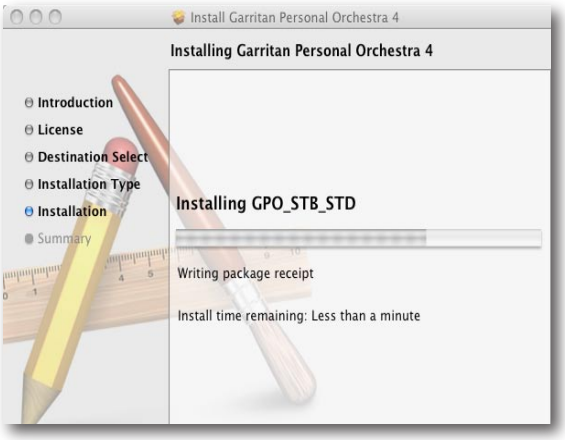
- The setup lets you select which plug-in formats you require. These plug-in formats allow Garritan Personal Orchestra, in addition to standalone use, to run as a virtual instrument plug-in that seamlessly integrates into your favorite music software program or sequencer (assuming that it accepts such instrument plug-ins). Please refer to the chapter “Using Garritan Personal Orchestra as an Instrument Plug-In” for further information.
    - The choices are Audio Units, RTAS and VST



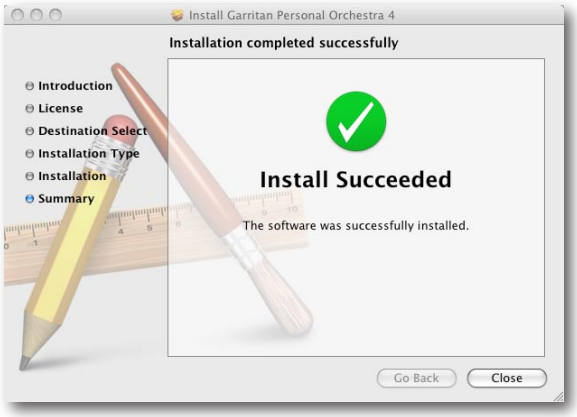
- You can select the folder into which the Garritan Personal Orchestra application and support files should be installed. For most instances, use the default. If you prefer to install Garritan Personal Orchestra in a location other than the default, click on "Change Install Location".



- Setup is now ready to begin installing Garritan Personal Orchestra. Click on "Install" to begin the installation process. Installing library files is very resource-intensive, and it may take some time to install all the samples.



- After a few moments a dialog box will notify you that the setup wizard has finished installing the Garritan Personal Orchestra on your computer.



When sample installation is complete, you will need to authorize your current copy of the Garritan Personal Orchestra. This procedure is described in the next chapter.

When you are finished with installation, remove the disc(s) from your drive and store them in a safe place if you have the DVD version. If you purchased the Download version be sure to make a backup copy. If anything happens to your computer, you can reinstall the Garritan Personal Orchestra from the discs or the backup.

IMPORTANT!

Please do not cancel setup after installation begins, otherwise a partial, broken installation may result.

Windows Setup

The setup in Windows installs four components:

1. The Garritan Personal Orchestra Setup Wizard
2. The ARIA Engine Installer
3. The ARIA Player Installer
4. GPO4 Sound Library Installer

The four component installations will be successive and it is recommended that you just select "Next" for each screen and use the defaults.

- First make sure your system meets or exceeds the system requirements. See the previous section of this manual for the system requirements. Also make sure your audio and MIDI hardware is set up and working with your computer.
- Close any programs you are running.
- For the Download version of Personal Orchestra, after download, unzip by double-clicking Garritan_Personal Orchestra_4.zip. Make sure you fully unzip the entire file. Do not run the EXE file through Window's compressed folder or Winzip directly. In the downloaded zip file you will see these items:

Note:

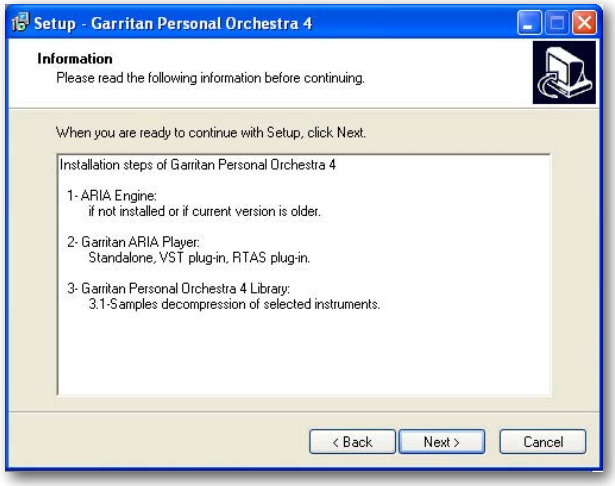
If unzipping is unsuccessful with the Windows utility, you may want to try Winzip or another free unzipping utility.

1. The Garritan Personal Orchestra Setup Wizard

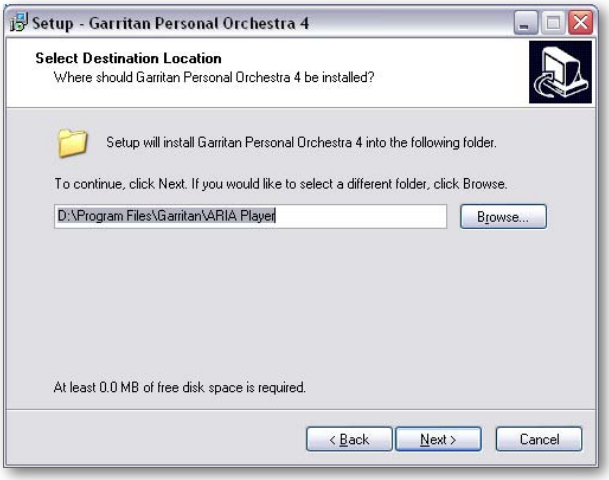
- Run WIN_Garritan_Personal Orchestra_4.exe from the location where you extracted the files.

  For DVD versions of Personal Orchestra, take the Installation disc out of the case, place it into your DVD drive in the computer and close the drive tray. You should see a Welcome Screen.

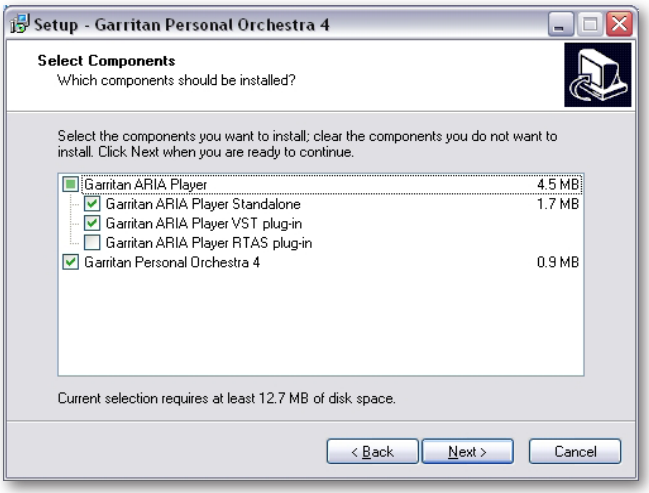
- If the setup screen does not automatically appear: Use Windows Explorer to open the installation DVD, or for Download users, WIN_Garritan_PersonalOrchestra_4.exe. Then start the Sample Manager by double-clicking "Install Personal Orchestra" setup.exe.
- You will next see an Information screen letting you know if you have other versions of ARIA installed or other Garritan libraries. Click "Next".



- You will also be prompted for the folder into which the Garritan Personal Orchestra application and support files should be installed; and where the shortcuts and icons should be placed. (You will be asked later where you want the samples to be installed.) For most instances, use the default. Unless you have a more sophisticated setup, the default location is recommended. To continue, click "Next"

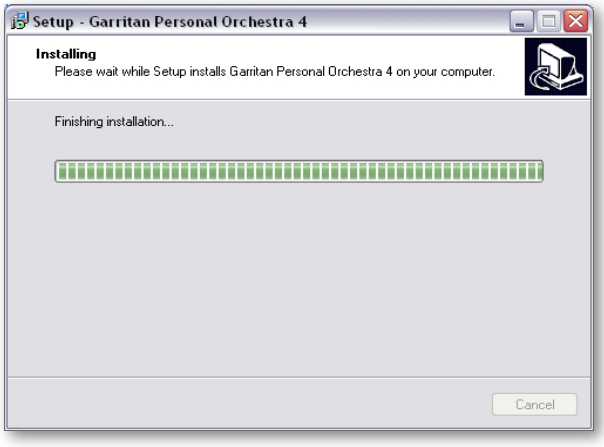


- The setup lets you select which plug-in formats you require. These plug-in formats allow Garritan Personal Orchestra 4, in addition to standalone use, to run as a virtual instrument plug-in that seamlessly integrates into your favorite music software program or sequencer (assuming that it accepts such instrument plug-ins). Please refer to the chapter "Using Garritan Personal Orchestra as an Instrument Plug-In" for further information.
    - The choices are VST & RTAS



- Setup is now ready to begin installing Garritan Personal Orchestra. Click on "Install" to begin the installation process. Installing library files is very resource-intensive, and it may take some time to install all the samples.

- After a few moments a dialog box will notify you that the setup wizard has finished installing the Garritan Personal Orchestra 4 **Main Installer** on your computer.



2. The ARIA Engine Installer

- You will be automatically prompted to install the ARIA Engine Component.

Follow the prompts in the ARIA Engine Setup Wizard (the “Next” button for the Information dialog, License, and Installation). After completion, you will see a screen “Completing the ARIA Engine Setup Wizard". Click "Finish" to exit the ARIA Engine Setup and continue installation.

3. The ARIA Player Installer

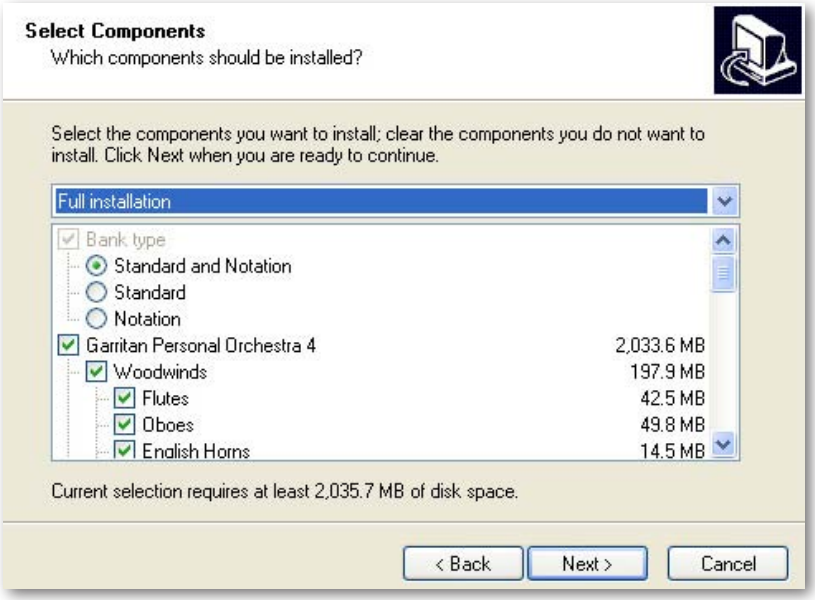
- After completing the ARIA Engine Installer, you will be automatically prompted to install the ARIA Player.

Follow the prompts and select where you want the program, plug-in component (e.g. Aria Player VST), shortcuts, and icons installed. Setup will then be ready to begin installing the Garritan ARIA Player. Click "Install". After completion, you will see a screen "Completing the ARIA Player Setup Wizard". Click "Finish"to exit the ARIA Player Setup and continue installation.

4. The Garritan Personal Orchestra 4 Sound Library Installer

- After completing the ARIA Player Installer, you will be automatically prompted to install the Garritan Personal Orchestra 4 Library sound files. This installs all the SFZ files, banks and the actual instrument sample files.

Follow the prompts in the Garritan Personal Orchestra 4 Setup Wizard (the "Next" button for the License Agreement, "Next" for the desired folder destination location, and "Next" for selection of Standard and/or Notation options and the instruments you want to install.



Note:

If you use GPO for live play or with a sequencer, choose the "Standard" version. If you use Finale, Sibelius or other supported notation program, select the "Notation" version. Select both if you have both a sequencer and a supported notation program. In case of doubt, install both Standard and Notation (it takes less than 100kb for both). The only reason we make it optional is so that people who only need one type can opt to have only that one type show in the instrument selection tree.

The installer will allow you to select or deselect specific instruments during your installation. Most will choose the default and install all the instruments. Click "Next" to continue.

- You will then be prompted to "Select your Samples Directory". Select the location into which you wish to install Garritan Personal Orchestra. The default location is recommended for most.
- You will be asked to select a Start Menu folder. The default is recommended. Click "Next" and you are ready to install the samples.
- The instrument sound files will then be copied to your hard drive. You will see screens flash by with status bars for each of the instruments being loaded.

- You will see a final screen indicating that the installation is complete.

Garritan Personal Orchestra should now be installed. You can verify this by launching Personal Orchestra. Once installation is complete and verified, you will need to activate your current copy of Garritan Personal Orchestra. This procedure is described in the next chapter.

When you are finished with the installation, remove the disc(s) from your drive and store them in a safe place if you have the DVD version. If you purchased the Download version be sure to make a backup copy of the original file you downloaded. If anything happens to your computer, you can reinstall the Garritan Personal Orchestra from the discs or the backup file.

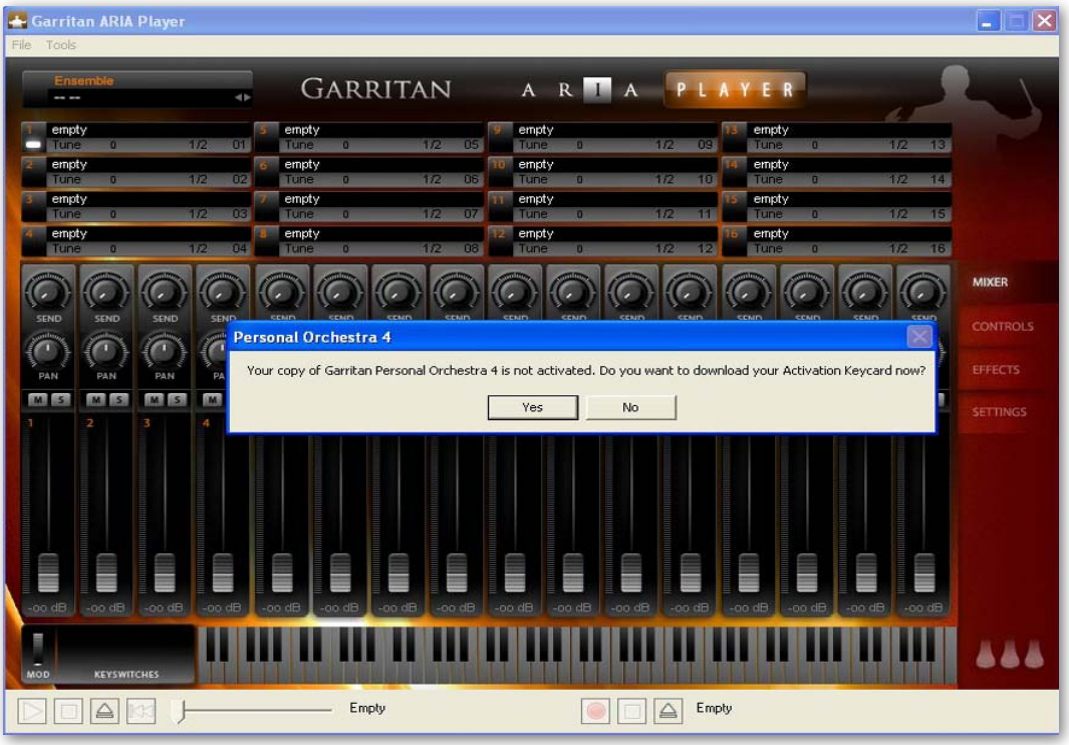
IMPORTANT!

Please do not cancel setup after installation begins, otherwise a partial, broken installation may result.

ACTIVATION

Activating Garritan Personal Orchestra 4

After Garritan Personal Orchestra 4 is installed you will need to activate it. You will notice that when launching Garritan Personal Orchestra 4 for the first time, the following pop-up message appears: "Your Personal Orchestra 4 is not activated. Do you want to start online activation now?"

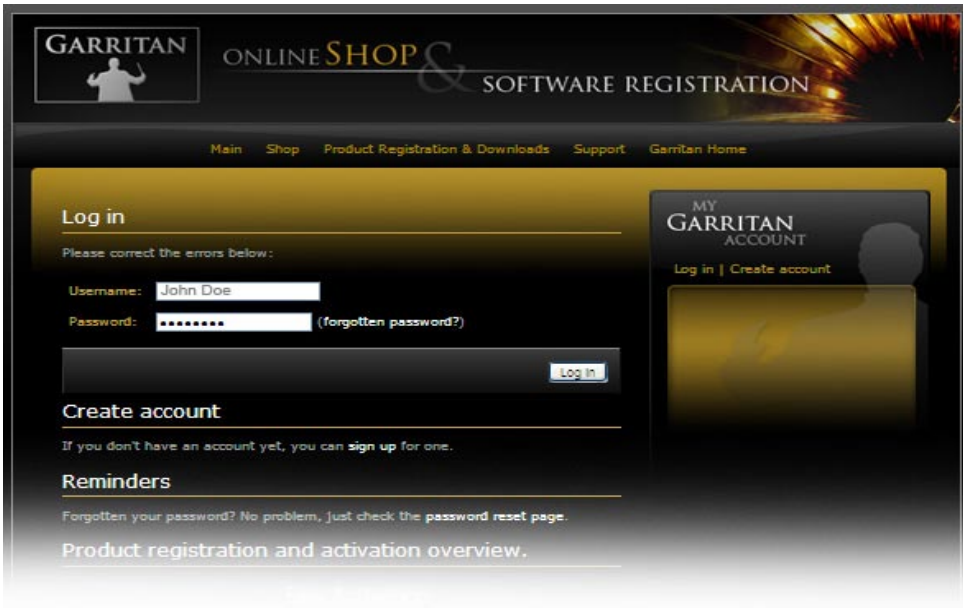


Click "Yes" if this computer has an internet connection, and you wish to start the easy activation process. At any time you can open your browser and go to **www.garritan.biz** to access our registration server. You will be presented with the Login screen. If this computer does not have an internet connection, you can register your Garritan product with any online computer, and simply copy the "Activation Keycard" to a removable USB drive, or any other method to transfer the Keycard to this computer.

If you ordered or updated online, you will have already created an account. You simply need to log in and activate with the user name and password you used when you made your purchase. If you ordered a physical boxed product, you will need to create a new account.

Log onto the Garritan Registration Site:

Log onto www.garritan.biz and enter the same username and password that you used when you made your purchase (especially Download customers).



- **Creating an Account**

  If you have purchased a boxed product, or have not created an account previously, you need to create an account. You will need to choose a user name and password and enter your email address.

You will then have an opportunity to enter your Profile Details. Once you do this you can amend your details at any time.

Privacy Policy: All personal information will be kept strictly confidential. Your information will not be shared with or divulged to any third parties for any purpose.

Product Registration: Enter Your Serial Number:

You will be asked to enter your serial number in order to register your product.

Where to Find Your Serial Number:

Online Purchases and Updates: If you purchased a product or update online, your serial number will be mailed to you immediately after purchase.

Thank you for shopping at **http://www.garritan.biz**

Please save this email for further reference, it contains the serial numbers of the products you have just bought!

Personal Orchestra 4: 40000-11111-22222-33333-44444

Note:

If you have not received your serial number via email, please check your spam folder.

Physical Boxed Products: If you purchased a physical boxed product, the Serial Number will be affixed in the DVD case just above the DVD disc.

The Activation Keycard

Once the serial number is entered and you click "Register", an Activation Keycard will be generated in your name. You can now download the "Activation Keycard" for this Garritan product. The "Activation keycard" is an image resembling a typical credit card. This image contains your registration and profile details encoded within the Keycard image. It will look like this:

After you have an account and have entered your Serial Number, you will receive an email with your Activation Keycard. The email will contain your keycard as an attachment (.png file) and the message will say:

Dear Customer,

Attached you can find the product activation key for Personal Orchestra 4.

Please save this email in a safe place, or save the attached product key on your hard drive.

Your Activation Keycard is also available online at any time. Go to "Activation Keycards" under the Registration & Downloads tab and download the Activation Keycard for Garritan Personal Orchestra 4.

You can now save the "Activation keycard" .png image file to your hard drive (keep it in a safe place). For convenience, we recommend that you initially save the .png file to your desktop.

Final Step: Activating Garritan Personal Orchestra 4

Locate the "license card" image where you saved it on your hard drive.

Open the Garritan Personal Orchestra 4 software application. If you saved the .png file to your desktop or a folder of your choosing, simply click and hold on the file, drag the file icon, or Activation Key image, directly onto the GPO ARIA Player application and release.

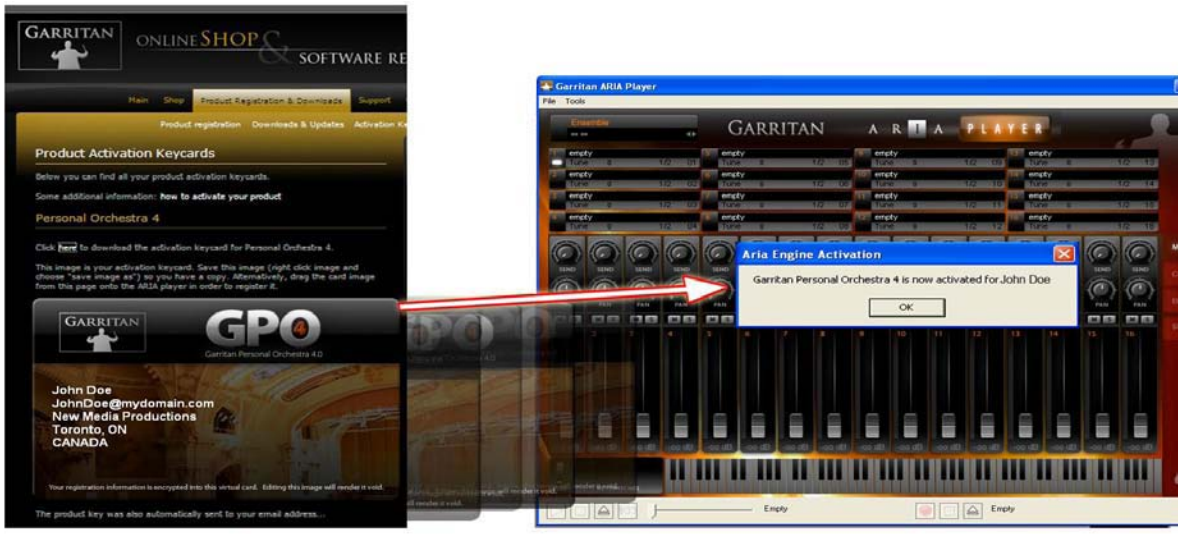
Drag and Drop the PNG file from the desktop onto the Garritan Personal Orchestra ARIA Player

Drag and Drop *PNG file from the Desktop onto the Garritan Personal Orchestra ARIA Application*

Alternative: Drag and Drop the Activation Key: As an alternative, you can also drag the picture from the web page onto the ARIA Player itself, and it will register in most cases. Please note that not all browsers will allow "drag and drop" actions from within the program. This is another reason it is best to save the .png file to your desktop and "drag and drop" it from there.

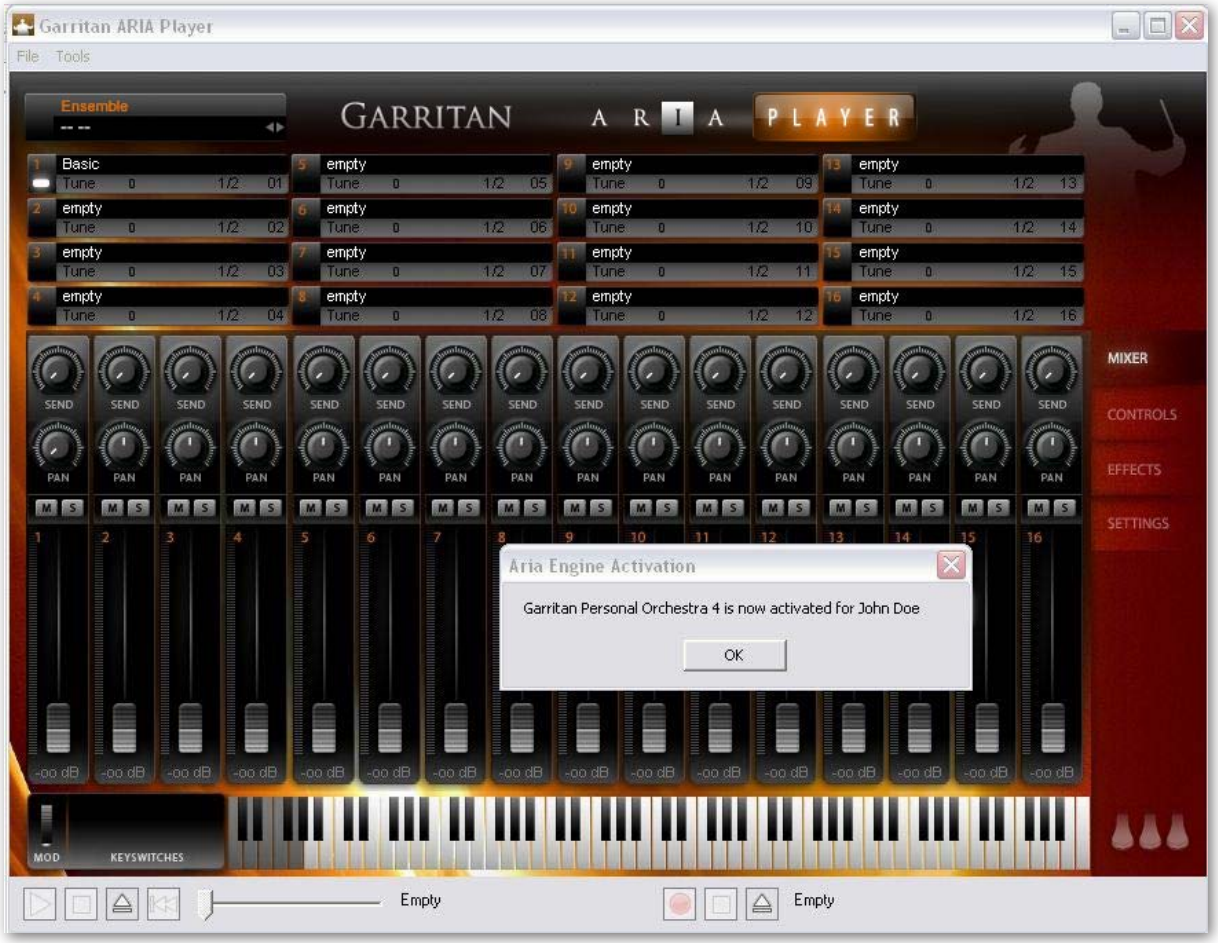
Drag and Drop

Card Image from the Registration Server onto the Garritan Personal Orchestra ARIA Application



You Are Now Registered and Activated!

The Activation will take place automatically and will bring up the following message: "Garritan Personal Orchestra is now activated for [*your name*]".



Extremely Important!!

The .png file contains your sensitive, encrypted personal information. Carefully protect this file. DO NOT GIVE THIS FILE TO ANYONE OR DISTRIBUTE IT IN ANY WAY OR YOUR PERSONAL INFORMATION WILL BE COMPROMISED. IF THE FILE BECOMES PUBLIC THE CARD NUMBER WILL BE BLACKLISTED AND THE CARD REVOKED. WE ARE NOT RESPONSIBLE IF YOU GIVE YOUR PERSONAL DETAILS TO A THIRD PARTY. IF THE CARD IS STOLEN, CONTACT US IMMEDIATELY. Without a valid card you will also not be able to obtain critical updates to the program.

Important Note:

You are allowed a maximum of four (4) installations. If you have special circumstances or require additional licensing, please contact us.

Updating to Latest Version:

Be sure to check the Garritan Web site for any possible updates that have occurred since the time your software was manufactured. Software is frequently updated and a more recent version may be available.

After the library has been installed, it needs to be activated. You are given a 30-day grace period for each library before activation is required, but it is recommended that you activate as soon as possible.

www.americanmusical.com

HOW TO USE GARRITAN PERSONAL ORCHESTRA

How to Use Garritan Personal Orchestra

Once installed and authorized, it's time to get started with the Garritan Personal Orchestra. There are three ways to use the Garritan Personal Orchestra: as a plug-in within a sequencer, with a supported notation program, or you can play it 'live' as a standalone application.

Playing Garritan Personal Orchestra as a Standalone Application ('Live' Play)

Garritan Personal Orchestra 4 can be launched by itself and played live via MIDI keyboard or other MIDI controller. The standalone version of the Garritan Personal Orchestra effectively makes your computer, audio hardware, and MIDI keyboard into a virtual orchestra that can be played independently of other programs. This mode is ideal for practicing solo instruments, silent play, and live playing. The limitation is that you can usually play only one instrument at a time. Unlike using it as a plug-in within a sequencer, your recording ability is limited and you cannot edit your performance (though you can use various audio software programs for this).

Launching Garritan Personal Orchestra in Standalone Mode

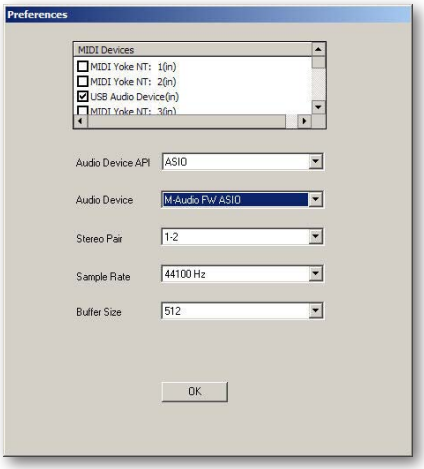
First, make sure that you have followed the instructions in the installation section of this manual. Be certain that your audio/sound interface and MIDI hardware interfaces are properly connected to the computer, your speakers or headphones are connected and everything is powered up.

To launch Garritan Personal Orchestra as a standalone application, click on the Garritan ARIA logo on your desktop or go to the Program Files or Applications folder and launch Garritan ARIA Player.

Basic Setup Information for Standalone Mode

To use the standalone version you have to configure the Audio and MIDI settings in the Garritan Aria Player dialog box (found in the Tools menu) before you can play. When used as a plug-in, the host sequencer or notation program has already set up its audio and MIDI connections, and the Garritan Personal Orchestra "plugs in" to them. However, with standalone operation Garritan Personal Orchestra communicates directly with your audio and MIDI interface. Setup for Mac and Windows computers is similar, except where indicated. Note that if you change your audio interface, you will almost certainly need to readjust these settings.

Call up the **Preferences** setup dialog from the Tools menu on the Garritan Aria standalone interface. You'll see drop-down menus for MIDI Device, Audio Devices, Stereo Pair, Sample Rate and Buffer Size.

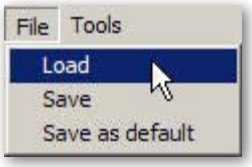


- **MIDI Device Menu:** All supported (and installed) MIDI interfaces are available in this drop-down list. Select the desired MIDI device from the list.
- **Audio Device Menu:** All supported (and installed) audio interfaces are available in this drop-down list. Select the desired audio device from the list.
- **Stereo Pair:** Here you can define which of the stereo outputs should be used. It is normal to have one stereo pair available, labeled 1-2. However many pro audio devices have multiple outputs available, in which case you may choose the one that you would like Personal Orchestra to output through.
- **Sample Rate:** Depending on the sound card and driver you are using, various sample rates are available. Set the desired sample rate here. Choose 44100Hz—if available—for best results.
- **Buffer Size:** The buffer size setting will determine the delay between pressing a key on your MIDI keyboard and hearing the sound (aka 'latency'). The default buffer size of 512 samples typically works well, but smaller buffer sizes will give a faster response (lower latency) and higher buffer sizes will give better audio performance (more polyphony and higher fidelity). Most modern computers and audio interfaces can handle a buffer size of 512 samples without a significant reduction in polyphony. If the sound is breaking up or crackling when a note sounds, first make sure that the audio connections and wiring are good, then try a larger audio buffer size setting. Please note that there is typically a trade-off between higher buffer sizes (polyphony and sound fidelity) and lower buffer sizes (faster response or lower latency). Also note that the sound card buffer size settings determine latency, rather than Garritan Aria Player itself.

Once you have your Audio and MIDI set up, and have loaded one of the instrument patches, you can begin playing Personal Orchestra. Press (use your mouse to click on) a key on the on-screen piano keyboard on the Garritan ARIA Player interface. If you can hear the selected instrument, try playing a key on your MIDI keyboard. If the MIDI and Audio configurations are correct, you should hear the corresponding instrument. If not, check the MIDI connections and wiring, and the MIDI output channel of your MIDI keyboard.

Also check that the MIDI channel for the loaded instrument is specified correctly. By clicking the number at the far right of each instrument slot in Aria, you may choose any desired MIDI channel, or "OM" for Omni, in which case the instrument will respond to any and all MIDI channels. If you are hearing the notes play, then the basic configuration is complete, and you are ready to use Garritan Personal Orchestra.

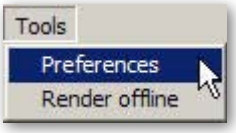
File Menu for Loading and Saving Presets in the Standalone



Configuration presets for Personal Orchestra can be saved and loaded. This gives the user the ability to customize instruments to suit personal preferences and save configurations for convenient future use. The File Menu choices are:

- **Load**—any saved configuration preset files in Aria format can be loaded by clicking on this choice and selecting the desired file.
- **Save**—any configuration can be saved by clicking on this choice, typing a name for the custom preset, and saving to a desired location.
- **Save as default**—any settings can be saved as part of the default, to be loaded automatically each time the Aria Player is booted in standalone mode.

Tools Menu—Standalone Mode ONLY

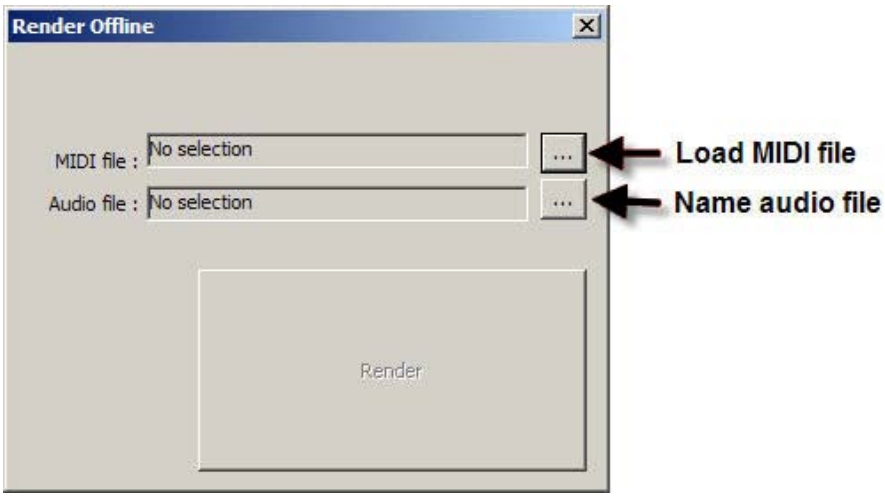


The Tools menu includes:

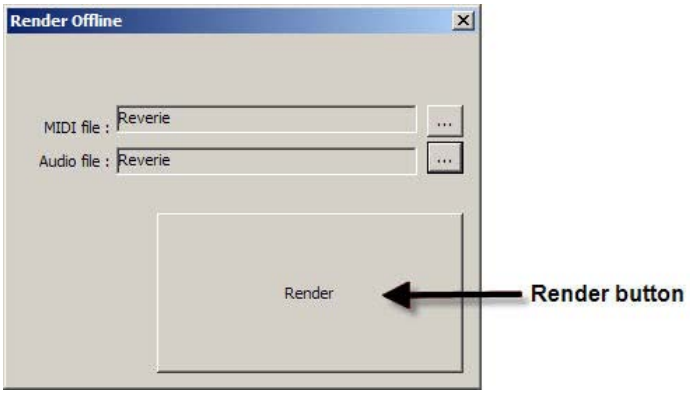
- **Preferences**—as described in the basic setup information above.
- **Render offline**—MIDI files can be rendered to audio offline using this feature.

To use the Render Offline feature:

1. Click on the Load MIDI file button.
2. Select the desired MIDI file.
3. Click on the Name audio file button.
4. Name the Audio File and specify its location.



Once the files are in place, there is just one more step:

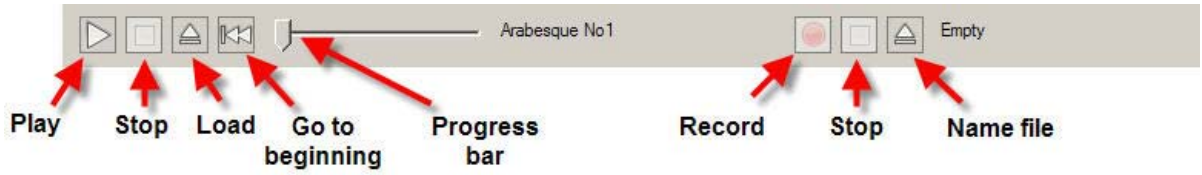


Click on the Render button. The audio file will be rendered to the specified location.

Note:

An alternate way to record Audio from Aria is outlined below for users who would prefer to hear MIDI playback during the recording process.

MIDI File Player and Audio Recorder (Standalone Version Only)



The standalone version of the player includes a MIDI File Player and Audio Recorder. They are located at the bottom of the standalone window. These features enable the user to load and play a standard MIDI file and render an Audio file from it. The MIDI controls are located on the left hand side and the Audio controls on the right.

To load and play a MIDI file:

1. Click on the "Load" button.
2. Choose the file you wish to load.
3. Click on the "Play" button.

The MIDI file will play back using the presently loaded instrument and any other features (e.g. Ambience reverb) activated in the player. The progress bar will move to the right as the file is played. To start the file from the beginning, click on the "Go to Beginning" button. The file can be stopped at any time by clicking on the "Stop" button.

To record your playback to an audio file:

1. Click on the "Name File" button.
2. Name the file and specify its desired location.
3. Click on the "Record" button.
4. Start playback by clicking on the MIDI "Play" button.
5. When playback finishes, click on the MIDI "Stop" button.
6. Click on the Audio "Stop" button.

The audio file will be located on your drive in the location you specified.

Note:

There is also an offline rendering feature (explained previously) that is located in the "Tools" menu of the standalone version. Using the Audio Recorder as explained above, the MIDI file being recorded will be heard during the recording process.

Using Garritan Personal Orchestra as an Instrument Plug-In

When used as a plug-in, Garritan Personal Orchestra is not a standalone program but rather a virtual instrument module that is seamlessly integrated into your favorite music software program or sequencer (assuming that it accepts such instrument plug-ins). They are called "plug-ins" because these are modular software applications that run inside a "host" music application, (*i.e.* a sequencer or notation program, typically).

There are various uses as a plug-in:

- MIDI recording and sequencing of Garritan Personal Orchestra
- Audio mixing of Garritan Personal Orchestra with other instrument tracks within a single program
- Easy automation of Garritan Personal Orchestra parameters in the music software program
- Effect processing of Garritan Personal Orchestra sounds using effect plug-ins in a music software program
- Saving and recalling of all plug-in settings when the music software program or sequencer file is reloaded
- Integration with other instruments into a "virtual studio"

MIDI sequencing is akin to the old self-playing pianos. As the player pianos used mechanical techniques to reproduce performance by associating key presses and durations with holes in paper, MIDI sequencers use electronic data to record and reproduce performances. When you play a note on a MIDI keyboard, you are instructing the MIDI keyboard to play a note for a period of time, as well as how soft or loud that note will sound. The MIDI Sequencer will record and play back this data. A major advantage to using a sequencer is that all settings are saved together with the song files and are totally retained and recalled upon reload.

A great thing about plug-ins is that they work with a large variety of compatible music programs. For example, Garritan Personal Orchestra can be used as a VST plug-in in many DAWs, music programs, sequencers, supported notation programs, and hosts. Personal Orchestra can also be used as an Audio Units plug-in or as an RTAS plug-in.

Here is a chart describing these three plug-in standards:

Plug-in Standard	Description	Windows	Mac
VST	The VST plug-in stands for Virtual Studio Technology and was developed by Steinberg, the makers of the Cubase family of audio programs. It is also used by Cakewalk Sonar, Mackie Tracktion, Nuendo, Magix Samplitude, FL Studio, and other sequencers.	X	X
Audio Units	The Audio Units (AU) plug-in standard was developed by Apple Inc. for Core Audio under Mac OS X. Audio Units is the preferred plug-in format on Mac OSX and is used by Apple GarageBand & Logic and MOTU Digital Performer.		X
RTAS	RTAS plug-ins (Real Time Audio Suite) are designed to work in the Digidesign Pro Tools environment. Pro Tools hardware and software are used extensively in the pro audio and post production communities.	X	X

Basic Setup Information for Using Garritan Personal Orchestra as a Plug-In Instrument

To use Garritan Personal Orchestra as a plug-in instrument, you simply launch your host music application/sequencer first and then launch the Garritan Personal Orchestra from within it. Make sure that your sequencing host program is properly installed and configured, and that it is producing sound properly. Used as a plug-in, Personal Orchestra's audio and MIDI data is managed by the host music software application.

Using Garritan Personal Orchestra in a Specific Music Program or Sequencer

Garritan Personal Orchestra works as a plug-in instrument within many popular music software programs. Each music software application has its own approach to handling plug-in instruments. Each

has a different method of installation as well as differing means of loading and accessing plug-ins. It is important to make sure that you refer to the instructions in your music software application's manual regarding the loading and operation of plug-in instruments.

Typically when using VSTs, the .dll files (dynamic-link libraries) associated with software instruments will all be kept in one VST folder which the host application uses to locate all available instruments (more information below).

Although it is not within the scope of this manual to delve into how plug-ins work for the various music applications, there will be tutorials on how to use the Garritan Personal Orchestra with the various music software programs. Please refer to the Support WIKI pages on the Garritan website at www.garritan.info.

Saving Personal Orchestra Parameters in a Music Program or Sequencer

While using Garritan Personal Orchestra 4 with a host music application, when you save a sequence or project with the host program, all of Garritan Personal Orchestra's parameters will be automatically saved as well. You need do nothing in the ARIA Player interface for this to happen. When you re-load your host music project, the Garritan Personal Orchestra settings will revert to the state in which they were when you saved your project file.

Important Technical Notes:

Windows VST applications only: To use Garritan Personal Orchestra 4 with more than one VST application, you need to manually copy the ARIA Player VST_x86.dll, installed into the chosen folder during installation of the library, to the appropriate VST-compatible host application's VST folder. Please refer to your particular application's user's guide and the Garritan support site for more information.

Regarding 64-bit hosts: Some hosts have one common VST folder for both x64 and 32-bit plug-ins, please only use the version of the plug-in that is native to your host, e.g.: x64 bit version of Sonar, use the ARIA Player VST_x64.dll. Mac OSX has standard folders for both VST and AudioUnits plug-ins and do not require this extra step.

An additional copy of the VST plug-in is available within the main Garritan ARIA Player applications folder, in the VST subfolder. Please don't use this folder as your main "vstplugins" folder.

Please note that a saved sequence in one music application may not be useable in other music applications, as each application generally has its own proprietary format.

VST Expression Support

Garritan Personal Orchestra 4 supports VST Expression, a new system that dramatically simplifies handling of articulations and expressions with sample libraries within Steinberg's Cubase. The new technology makes recording and editing articulation commands much easier, with all articulation data displayed separately in both track inspector and editor windows. More information about VST Expression can be found at the Steinberg website.

Using Garritan Personal Orchestra with a Notation Program

Notation is a fundamental part of music creation. Notation programs allow you to easily create and print sheet music with your computer. Until recently it was not possible to play realistic sounds from notation programs, but Garritan has pioneered the use of notation software programs with samples.

There are two ways to use Garritan Personal Orchestra with notation programs. One is to use it directly from within a notation program that is capable of hosting plug-in instruments. The other is to use the ARIA Player in Standalone mode and route MIDI output from the notation application to the player. Recent advances in notation technology will allow you to play Personal Orchestra sounds directly from within certain notation programs.

Note:

Some notation programs may not support software instrument plug-ins. And some older versions may also lack plug-in support. Please check your notation program to make sure it supports VST or Audio Units software instrument plug-ins.

There are many resources concerning the specifics of how to use Garritan Personal Orchestra with various notation programs on the **www.garritan.info** website including tutorials, notation files, tips, techniques, plug-ins, special programming, troubleshooting advice, and informative links.

HOW THE ARIA PLAYER WORKS

How the Garritan Aria Player Works

The Basic Interface and the View Screens

The Aria Player is a custom-made player developed specifically for Garritan libraries such as Personal Orchestra. It constitutes the best sounding and most powerful sample engine available, built from the ground up for high performance and exceptional quality. The Aria Player enables you to load Garritan Personal Orchestra instrument sounds, control various parameters for playback, and do a number of other things. The software engine was custom designed and programmed by Plogue Art et Technologie Inc. The Aria Player has various view screens or "windows" that are accessed by the four view tabs to the right. Those screens consist of the "Mixer" window, the "Controls" window, the "Effects" window, and the "Settings" window.

The Mixer Window

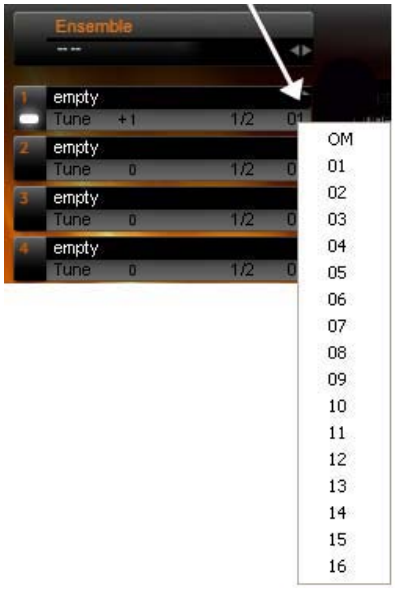
1. Slot (1 - 16): You can have up to sixteen instruments loaded in each instance of the ARIA Player.

2. Load Instrument: Click here to load an instrument in the corresponding channel.

Clicking the instrument slots brings up a dialog box from which you can load the instrument(s) of your choosing. The instruments will be grouped in a simple hierarchical menu by Garritan Library. You can choose your instruments by instrument group Woodwinds, Brass, Percussion, Harps, Keyboards, Pipe Organ, Solo Strings, Section Strings, and Choir.

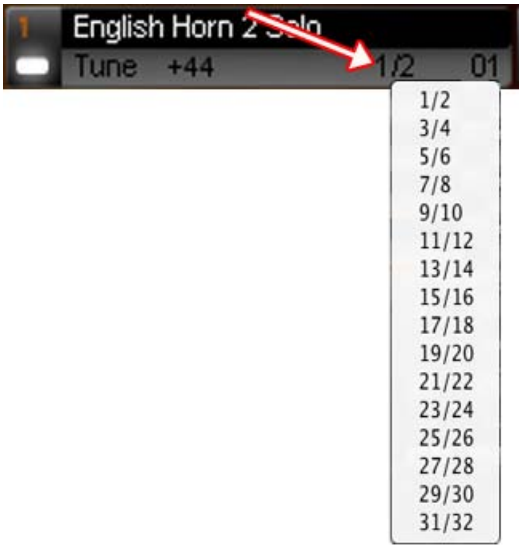
Choosing “Empty” will remove an assigned instrument from a channel. Choosing “Import” will allow you to load an .sfz file (a patch) to use as an instrument sound. Choosing “Reload” will restore the default parameter settings for that instrument.

3. MIDI Channel Assignment: Click the number to the right of the Instrument field to select the channel for the instrument you have loaded. If an instrument is assigned to that channel, you should see its pitch range represented on the virtual keyboard at the bottom of the window.



4. Tune: The "Tune" Control will allow you to make tuning adjustments to each instrument. Tuning controls are adjusted by click and drag – horizontal movements to the right make the pitch sharp. Tuning range is +/-100 cents.

5. Output Assignment: Here you can assign outputs. The default is channel 1 and 2 (stereo).



6. Sends: The Send Knob controls the amount of signal sent to the Ambience reverb for each corresponding channel.

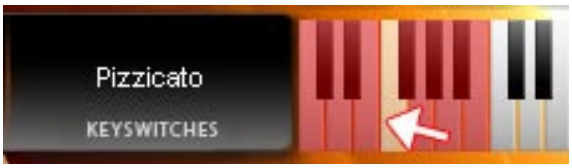
7. Pan Control: This slider controls the left-to-right balance of the audio of the corresponding channel. Also see Stereo Stage control information.

Note:

You can CTRL-click (Command-Click on OSX) a knob to put it back to its default position.

8. Keyboard: The bottom of the window features a virtual onscreen keyboard that indicates the range of notes that can be played on that instrument. When a channel with an instrument assigned to it is selected, a section of the keyboard will be highlighted. Keys that are being played will be shown in real time.

9. Keyswitch Identification: This section identifies the keyswitches being used. Keyswitches are used to change between techniques and articulations without the need to load separate patches. The keyswitches are displayed below the instrument's range using the color pink. The selected keyswitch is displayed with a yellow color and the represented patch is identified in the window to the left of the keyswitches.



Note:

In the Notation instruments all keyswitches are located in the very bottom octave. This location is below the display range of the virtual keyboard. However, the keyswitches can still be seen and chosen for testing by clicking in the space where the keyswitch name is shown. This will open a menu of the available keyswitches. You can choose a keyswitch from the menu..

10. Volume Control Sliders & Solo/Mute Buttons: This slider controls the relative volume level of the corresponding channel. Above the volume control sliders are the solo and mute buttons.

11. Window Selection—Mixer/Controls/Effects/Settings: These four tabs allow you to select between Mixer, Controls, Effects and Settings Windows.

12. Load Ensembles: Click here to load ensemble presets.

Controls Window

All virtual knobs in the Controls Window can be adjusted by holding down the left button of your mouse and moving it up or down (rather than in a circle, in the direction of the knob). Release the button to set the level. You can CTRL-click (Command-Click on OSX) a knob to put it back to its default position. The numerical text below the knob will give a measurement reading.

Equalizer Controls

The EQ section is a three-band equalizer, with each band having a separate gain knob (-24dB to +24 dB). The "Low" controls the filter's gain for the bottom of the spectrum, the "Mid" for the midrange frequencies and the "High" controls the top end of the frequency spectrum. Adjust by placing your cursor over the desired knob, left click/hold, and move the mouse forward or backward. Release the mouse button at the desired number.

Auto-Legato Controls (including auto-trills)

Auto-Legato is a convenient way to create smooth legato note transitions whenever note overlaps are present. This feature automatically detects note overlaps and applies changes to the attack and decay characteristics of the note transitions. There is one control button:

On/Off button. This activates/disables Auto-Legato. The button lights when activated. This switch can also be controlled using CC#102.

This control also provides auto-trills. This is an extremely convenient way to create trills. From a MIDI keyboard, just hold the first note of the trill while pressing and lifting the second note of the trill and the two notes will alternate.

Please note that Auto-Legato works monophonically and can cause loss of that instrument's ability to play chords (polyphonically). Auto-Legato is mainly for use as an easier way to achieve legato. You may get better results with manual techniques, though they take more effort.

Stereo Stage Controls

When Stereo Stage is turned off instruments can be panned from left to right in the usual way. This positions instruments left to right by relative left/right volume intensity only. When Stereo Stage is turned on it adds calculations that simulate the arrival times from the position of the instrumental sound source to a pair of virtual stereo microphones plus the first reflections from side walls, rear walls, and ceiling. This can create a more three dimensional image for positioning instruments on the stereo stage, both left to right and front to back, especially for monaural instruments (*e.g.* solo instruments that lack recorded stereo information.)

There are two controls visible on the Controls page of the interface for Stereo Stage.

1. **On/Off button.** This activates/disables Stereo Stage. The button lights when activated. This switch can be also be controlled using CC#103.
2. **Depth.** This sets the position of the instrument front to back on the stereo stage. Small percentage numbers place instruments closer to the microphones; larger percentages place instruments

farther back on the stage, 100% being near the back wall of the stage. The Depth parameter can also be controlled with CC#36.

When Stereo Stage is activated the panning knobs in the mixer section of ARIA still control the left to right positioning.

Note:

As in real life, instruments that are placed near the microphones will display greater separation from left to right than instruments that are positioned near the back wall of the stage.

Instrument Controls

The control parameters available in this section will vary from instrument to instrument. Some instruments may have few controls and some may have many, depending on the programming of each instrument. These controls usually correspond to CC MIDI controller numbers and load with default settings.

Effects Window

The Effects tab brings up the control settings for Ambience reverb. Ambience can be used (with the send knobs) to apply flexible room reverb to the sound of the Personal Orchestra Instruments.

The acoustic environment is integral to the overall sound of an orchestra. How the instruments blend and project to the listener can be vital to the musical performance itself. Natural reverberation or ambience is very noticeable in live orchestral performances. From the early cathedrals, which were once a focal point for musical performance, the sound of reverberation seems to impart a sense of awe and wonder. Today's orchestras are often heard in a concert hall which also can elicit the same emotional response as it wraps and captivates the listener in sound. Concert halls have their own unique ambient sound and no two concert halls sound exactly the same. Many of the greatest halls, such as the Concertgebouw in Amsterdam, Symphony Hall in Boston, or the Great Music Hall in Vienna, were built more than 100 years ago, before the advent of modern acoustic science, yet hearing an orchestra in those spaces is breathtaking.

Reverberation describes the phenomenon that occurs whenever a sound is made in an ambient space. Whenever a sound is produced in an enclosed space it radiates in all directions. When these radiated sounds hit a surface such as a wall or the ceiling, the sound is either reflected or absorbed. The

first reflected sounds are usually stronger and become more and more diffuse as the sound bounces around the room. Our ears and our brain recognize these signals and let us know about the type and size of space we are in.

Much in the same way as the acoustical space adds a great deal to the music, reverb can impart that certain three-dimensional ambient sound to an instrument or group of instruments. Reverb can also help to smooth out the sounds of the instruments and cause them to blend together in the mix by giving them a sense of space and effectively smoothing the sonic edges. Of all the effects that can be applied to music, reverb is perhaps the most widely used one, which may be because it emulates the sound that's literally heard everywhere around us.

Personal Orchestra integrates the Ambience™ Reverb—a great sounding reverb that rivals the quality of the best commercial reverbs. Just as Personal Orchestra is a "virtual instrument" designed to simulate musical instruments, Ambience allows you to simulate the reverberation of a concert hall and many other spaces. You can create virtual concert halls, ballrooms, recital halls, parlors, auditoriums, cathedrals, and other spaces.

Ambience is turned on by default and to deactivate it you must click the ON/OFF button. It is often not desirable to use Ambience reverb if you have your own reverb or convolution program.

Ambience has a number of performing space presets to choose from. These presets have been custom-made for Garritan Personal Orchestra and it is recommended you first try out these presets. Presents include Ballroom 1 & 2, Cathedral, Concert Hall 1 & 2, Jazz Club 1 & 2, Parlor, Piano Hall 1 & 2 and Recital Hall 1 & 2. You can also edit these presets or experiment with the various settings to customize the acoustical environment as needed.

There are a number of main knobs in the Ambience control panel. The most important parameters are reverb time (the time for the reverb to fade away), size (the size of the room) and the pre-delay time. Below is a description of the relevant controls in Ambience:

Note:

To control the amount of reverb for each instrument, use the Sends in the Mixer window.

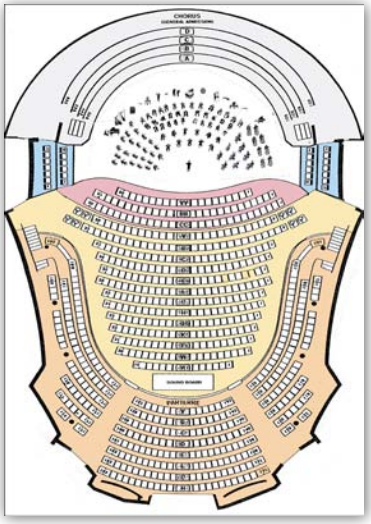
- **DECAY**—This controls the time it takes for the reverb reflections to fade away into silence
- **DIFFUSION**—Diffusion is the reflecting surface's ability to spread the reverb out. This control has a subtle effect on the sound and is especially noticeable with small room sizes.
- **SIZE**—This controls the size of the room. Note that long reverb time and small room sizes do not mix well. For natural sounds, a large room size, such as a concert hall, should be accompanied by a long reverb time, and vice verse.
- **PREDELAY**—This controls the amount of time between the direct sound and the first of the reverb reflections. It is pre-delay that defines our perception of the size of the room.
- **WIDTH**—This controls the stereo spread from mono (0%) all the way to a wide stereo (100%). It is recommended this be set close to 100%.
- **QUALITY**—This knob allows you to trade off reverb quality for CPU usage. High quality equates to high CPU usage. You can make fun effects if you set it very low (try it!). If there is too much CPU demand on your machine, try turning down the quality.
- **VARIATION**—This control creates a new variant of the same room.
- **LEVEL**—This controls the amount of the processed reverberant sound.

Tip:

Try using different Ambience levels for different instrument groups, try assigning one level to the strings and a different level for the brass. Often instruments toward the back of the stage, such as brass and percussion, may need more reverberation than, say, the strings or woodwinds.Use the effects "Send" in the Mixer window to control the levels. Be judicious and try to avoid drowning the orchestra in too much reverb or muddying the sound with delay trails. Remember, in some smaller spaces, instruments can be fairly intimate. Ambient effects should blend as part of the sound without being perceived as something that was added. Careful and proper use of panning and equalization will also help to keep the various sections from interfering with one another. The effort to make your virtual performance spaces sound just right will prove invaluable.

Note:

It is important to bypass the on-board reverb of the ARIA Player when using Reverb or Convolution in your sequencer or host program. Otherwise you will have two simultaneous reverbs and it will sound very muddy.



Settings Window

The Settings tab brings up additional information about the ARIA Player. This screen displays the version of the software and its copyright information as well as information about how the ARIA sample engine is performing. The information in the two left-hand columns indicates the software's current CPU and RAM usage, disc efficiency and current MIDI events and settings. You may adjust some of the settings in this window by clicking on the box to reveal a drop-down menu:

- **Dyn Max:** Determines the threshold for RAM usage by the software. The default is "256 MB" and the other choices are 128 and 512.
- **Pre-Caching:**Determines how many samples of an instrument the software will process before playing them.A higher setting will result in longer initial load times, though you should increase this setting if you are using a slower computer. The default is "32 Kb."
- **Quality:** Determines audio quality of the playback and recording. The default is "Normal (Hermite)."

- **Tuning System:** Determines the tuning system of the instrument in the software. There are different tunings for regions throughout the world, but to start, we recommend the default, "International 440." Other choices are shown on the right:

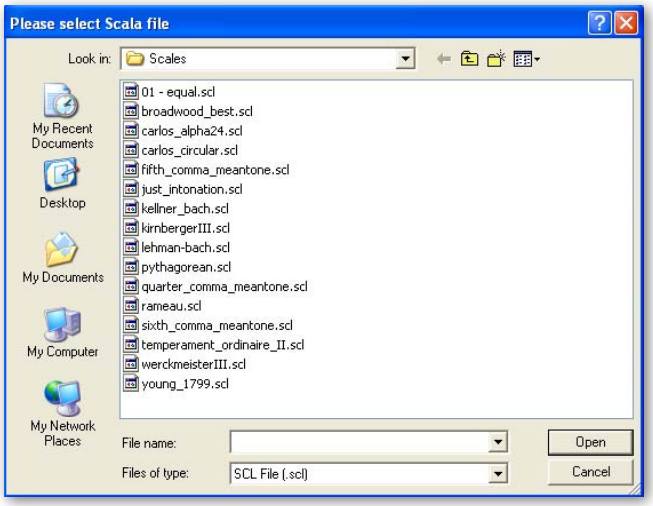
- **Inst. Poly:** Determines the amount of polyphony (multiple notes sounding simultaneously) each instrument can play. A higher setting will allow for greater polyphony but also increase CPU usage. The default is "32."

Get More Sounds Button: Clicking this button will bring you to a Web page where you will be able to download more instruments and sounds.

Get Help Button: Clicking this button will bring you to a Garritan Support web page where you will be able to obtain help.

Scala Import Button: The import button provides a variety of other tunings that can be imported and used with Personal Orchestra. The scala file import feature enables the use of thousands of other tunings, if desired.

The following menu appears when the "**Import**" button is clicked:



The **Scala Center** box allows you to select the base note (or center) of your scale.

www.americanmusical.com

PLAYING GARRITAN INSTRUMENTS

Playing Garritan Instruments

Garritan provides stellar tools to transform high-quality instrument sounds into stunningly realistic performances. The ARIA Player offers an easy, intuitive, and standardized control system to enable you to play and shape the orchestral instrument sounds, either in real-time or through a sequencer or notation program. The controls for one family of instruments generally carry over to other sections so that you feel at home with the entire soundset and the system is streamlined so that you can make great music quickly. With little practice, you can perform several tasks simultaneously, as a real musician does, so you can hear the musical results as you play. This chapter introduces you to the performance controllers that offer you a wide range of possibilities for musical expression.

Basic Controls (Brass, Wind and String Instruments from Personal Orchestra)

The Real-Time Control System (for Brass, Winds and Strings):

With a MIDI keyboard it is possible to start making music within minutes of installing GPO. The four basic controls are shown above. Play the keyboard with your right hand. The sharpness of an instrument's attack is controlled by how hard you strike the key. With your left hand, use the modulation wheel to control dynamics and special keyswitch notes that will alter the playing style of the samples (like turning brass mutes on and off). The sustain pedal connects the notes, allowing you to make slurs and legato transitions.

In addition to these four basic controls, Personal Orchestra features other controls for greater control over your instruments, all of which are user-adjustable. Automatic Variability imparts subtle changes in tuning and timbre, and portamento controls let you continuously glide between notes like string or trombone players. With this controller-based approach, you play your articulations in real time in much the same manner as a real player does.

Note:

Instruments which do not sustain their sounds, such as pianos and drums, follow the General MIDI convention using note velocity for dynamic and sustain pedal for sustains.

1. Modulation Wheel Control (Volume and Expression for Sustain Instruments)

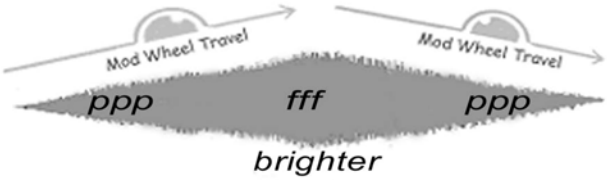
Shaping Dynamics & Playing Expressively

One thing that makes an orchestra sound great is dynamic contrast. Every phrase and the notes themselves have unwritten dynamics and nuances that players interpret. Without dynamics, music lacks its depth of expression. Dynamics and expression in Garritan Personal Orchestra are achieved through the Mod Wheel. Normally, this controller is mounted on the left side of the keyboard and is played with the left hand. With Personal Orchestra, the Mod Wheel simultaneously controls both Volume (*ppp* to *fff*) and Timbre (brightness or tone) for all non-percussive instruments. Especially with the brass instruments, louder levels produce a brighter sound.

Get to Know Your Mod Wheel for expressive, sustaining instruments like winds and most strings!

The Mod Wheel controls the dynamic ebb and flow of volume and timbre changes. In the case of a sequencer, make sure to record a nudge of the Mod Wheel at the beginning of every MIDI track so that GPO instruments will start with the correct volume upon playback. Remember that in GPO the Mod Wheel is not a "set and forget" controller. It is intended to be used as an expressive controller that is in nearly constant motion, shaping the volume and timbre of a passage. It is analogous to the air being blown through a wind instrument or a bow being drawn across the strings in a stringed instrument.

You will discover that using the Mod Wheel Control adds a new dimension of feeling and expression to your performances, making them all the more believable. Try experimenting with the Mod Wheel to develop control over the dynamics. As you play a melody, attempt a gradual crescendo or decrescendo, instead of going suddenly from soft to loud or loud to soft.



As shown above, the, Modulation Wheel allows you to simulate a surging crescendo/diminuendo

Exercise:

Play a melody with your right hand only and notice how there is little variation at all. It doesn't sing as it should. Now imagine how you would sing the tune. Where is the peak of the phrase? Where would you make a crescendo and a diminuendo? Now, as you play the melody, attempt those crescendos or decrescendos with the Mod Wheel. Listen to the effect as you make gradual changes, adjusting the dynamics to suit your musical sensibilities.

IMPORTANT!

Even though instruments in ARIA load with a default value, it is best to always record Mod Wheel data at the beginning of every MIDI sequence track in order to start with the correct initial volume.

Note:

In addition to the Mod Wheel (CC#1) GPO will also respond to breath control (CC#2) and MIDI expression (CC#11) to control the function of expressive volume/timbre. Be careful to use only one at a time or the data between these controllers will cause interference. It is not necessary for the user to take any steps to activate these extra controllers. They are always active.

In typical General MIDI soundsets, the Mod Wheel is used for its typical function to add modulation or vibrato to the sound.

2. Note Velocity (Attack for Sustain Instruments/ Volume for Percussive Instruments)

Virtually all keyboards made today support a feature called "Note Velocity" which refers to how fast (or hard) you strike a given key. The harder you press down a key, the harder and sharper the attack. The gentler you hit the key, the softer the attack.

Applying proper accentuation brings clarity and emphasis to the notes being played. It also shapes the rhythm and flow of a piece of music. The degree of force you apply to the keys will vary depending on the instrument selected and the musical context. With brass and woodwinds, accents are made by "tonguing" to emphasize certain notes. With strings notes are emphasized by how hard the player digs the bow into the string. Whenever you feel that a note should be accented, do it by striking the key harder.

It is important to note that this control relates to attack strength (for the most part) independent of volume. Most instruments in Garritan Personal Orchestra (brass, woodwinds and most strings) have volume controlled by the Mod Wheel. So, don't always try to play notes louder by banging on the keyboard, or the result may be a heavily accented note that you did not intend. Percussive instruments (including the piano and pizzicato strings) do use note velocity for volume and volume-related timbre changes, in addition to attacks. The Mod Wheel won't do anything for those instruments.

3. Sustain Pedal (Legato for Sustain Instruments / Sustain for Percussive Instruments)

Legato—Playing Smoothly and Evenly

So far, we have focused on aspects of performance that are controlled with your fingers, but an important part of your performance comes from your foot. Most keyboards include a sustain pedal. Instruments that can play sustained notes (string sustains, woodwinds and brass) use the sustain pedal to activate the legato playing techniques. *"Legato"* literally means connected and directs the performer to play smoother transitions between notes instead of accenting each one.

Legato is achieved by holding the sustain pedal down for the desired group of notes. Whenever you depress the sustain pedal, the attack portion of the sample is removed to create much smoother transitions between notes. Just like note velocity accents notes to make them sound detached, the legato feature blends notes into an unbroken seamless musical phrase. To get an idea of what the legato sustain function does, consider the following illustration. This is what the waveforms of a musical phrase looks like when played on a typical sampler:

Notice how disconnected the notes are. Using the Sustain Pedal removes the attack portion of the sample and connects the notes for smoother sounding effect. Using Mono Mode makes sure there are no overlaps. The result is a phrase that sounds like a real legato phrase.

In the case of brass and woodwind instruments, notes are tongued when you have your foot off the Sustain pedal. Slurs between notes occur when you hold down the pedal. For section strings, *détaché* notes are activated when the sustain pedal is up and legato notes are triggered when the pedal is down. You can also depress the sustain pedal to emulate same-string note changes which are used in rapid scale passages. Some instruments, such as the harp and triangle, use the sustain pedal to switch between the standard full decay of notes and damped notes. For instruments actually possessing sustain pedals (pianos), it functions as you would expect.

Note:

Strings, brass, and woodwinds can also be used with the Auto-Legato feature as an alternative to using the sustain pedal. This feature automatically detects note overlaps and applies changes to the attack and decay characteristics of the note transitions. Auto-legato is located in the Control tab on the ARIA Player.

Choosing Between Auto-Legato and Sustain Pedal Legato (CC#64)

Since Garritan Personal Orchestra gives two choices for legato creation the question arises: Which should I use? The answer is, "It depends." Here are the main differences so that you can make an informed choice. Auto-Legato is the most convenient method to use and can give good results when it is applied to take advantage of its intended design, but has some limitations. Those limitations are related to the way it handles polyphony. Its detection of overlapping notes and automatically stopping the first of the overlapping notes in favor of the second means that it functions in what is commonly known as "mono mode." This gives automatic transition control and the ability to do easy trills but it can only play one note at a time. This means it works well with any single line parts. It won't work for polyphonic parts where more than one note is played at a time. This means it is best applied to individual instrumental parts like solos or section parts that don't use divisi or otherwise split the section into playing chords from a single MIDI track.

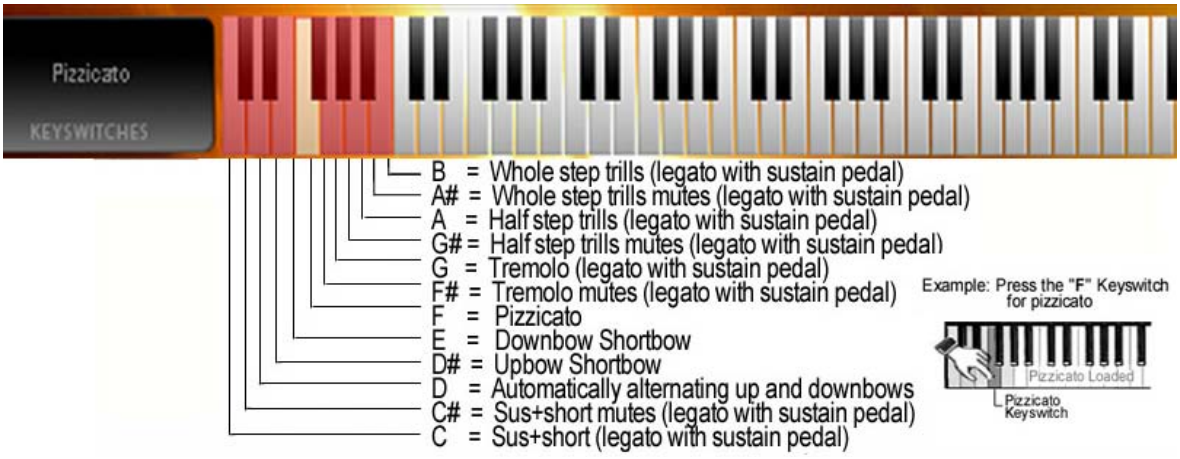
In contrast, using CC#64 is more flexible and can potentially give superior results but requires more work on the part of the user. It is up to the user to place the CC#64 "switch" data in the MIDI tracks as needed. It is also up to the user to precisely determine note overlaps since the amount of note overlap won't be automatically determined as with Auto-Legato. This gives the user great flexibility in adjusting the sound of the note transitions but requires considerable attention to detail to get the best results. Usually, a combination of carefully chosen note overlaps, CC#64 switching, and CC#21 (release/decay) data will allow the user to craft the smoothest legato note transitions. Sometimes in section string parts it may even be advisable to avoid using CC#64 and just overlap the notes to best effect. It all depends on the type of transition the user desires. Experimentation is the key.

Most users will probably find themselves using a combination of the two types of legato, the choice dictated by the requirements of the track and the specific instruments being used in the composition. In the case of single line parts the user may wish to begin by using the convenient Auto-Legato and only changing the approach to CC#64 if Auto-Legato is insufficient for the desired results. If polyphonic parts are needed then CC#64 is the correct choice.

One more thing to keep in mind: The MIDI controller CC#102 switches Auto-Legato on and off (0=off, 127=on.) This lets you place data in your tracks to activate Auto-Legato conveniently for single lines and turn it off for manual control during polyphonic or special case situations.

4. Keyswitching (Changing Articulations and Techniques In Real-Time)

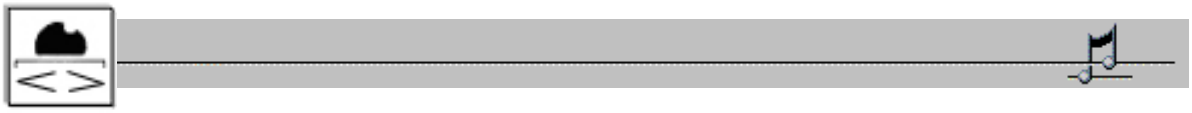
Keyswitching is a feature that allows you to change articulations quickly while playing. With a simple touch of a key located on the keyboard below normal range of the instruments, you can move between different playing styles of an instrument without having to load multiple patches in multiple slots in the ARIA player. Many instruments in Garritan Personal Orchestra have Keyswitch patches, denoted "KS" next to their name. When you press a key in the Keyswitch area, the ARIA Player loads the corresponding articulation into the playing area of the keyboard. The Keyswitched notes are displayed on the player keyboard in yellow and brown. All patches load using the first Keyswitch as the default. Keyswitches remain active until another Keyswitch message is received. When the appropriate note on the Garritan Personal Orchestra ARIA Player is pressed, it automatically switches to the corresponding articulation. Here is an example of a typical Keyswitch layout for section strings:



Keyswitch Tips:

- Always put the Keyswitching note for the particular instrument 'before' the first note of the articulation you want to play, not at the same time!
- If you transpose your score, you must be sure not to transpose the KS notes! Any transposition to these notes will change (or eliminate) their function.
- Although it may be tempting to use your mouse to trigger one of the displayed Keyswitches in the ARIA Player, it is seldom recommended. The Player's graphic representation of keys, wheels, and knobs are primarily there for auditioning sounds.

5. Additional Controls:



In addition to the four basic controls, there are many other ways you can fine tune your Personal Orchestra performances.

Pitch Bend Wheel: This control bends the pitch of a note. You can add scoops, slides or drops to solo strings or the trombone at the beginning or ending of notes and passages.

Automatic Variability Controls: These controls automatically create tuning and timbre variability from note to note. The VAR 1 knob controls intonation with random tuning variations, adjustable from a few cents to an entire semitone. The VAR2 knob introduces random variations in timbre quality by adjusting a filter on the instrument. The combination of both controls proves a more human result in the quality of the sound. The VAR 1 and VAR 2 controls can also be adjusted or varied throughout a piece by using MIDI controllers CC#22 and CC#23, respectively. See the chapter on ARIA Player Operation for additional information on this feature.

Portamento Control: This control lets you slide from one note to another. It is particularly helpful with some instruments, such as the trombone and the strings. There is a knob that adjusts the portamento for instruments that use this function. Additionally, MIDI controller CC#20 can be assigned to an external MIDI fader or drawn as graphic data in your sequencer of choice. Portamento is off by default. In general, slides between smaller intervals require greater values than slides between larger intervals. It is best to draw the data manually (for any specific notes that require slides) in your sequencer or to assign this feature to a separate hardware controller (CC#20) for real-time control.

Length Control: The default length is the natural release/decay length of the sample. As you adjust MIDI controller CC #21, the length of the release/decay of the sample can be varied over a useful range. This can be used along with MIDI note length data and velocity strength to give a wider variety of articulation types ranging from very short and light to accented and forceful. With strings this can help simulate bow strokes from light *sautille* to strong *marcato*. It can also give control of note releases in legato situations by lengthening releases for smoother overlaps. With *pizzicato* patches very short values can give the impression of a damped pizzicato. With wind instruments, very short staccato notes can help create the illusion of double- and triple-tonguing.

Vibrato Control: Non-vibrato (NonVib) solo woodwind and brass instruments have vibrato control. There are two vibrato controllers: Aftertouch (controls vibrato intensity) and Controller CC#17 (controls the vibrato speed). Using these controls, vibrato can be added to a solo part with natural variations in entrance timing, speed variations, and intensity.

- **Hidden Aftertouch (aka Channel Pressure) Vibrato Intensity:** Many keyboards send Aftertouch data when finger pressure on a key is varied while the key is held. Aftertouch data is used to adjust the vibrato intensity of an NonVib instrument. This controller data can also be "drawn" into MIDI tracks manually.
- **Vibrato Speed Controller CC#17:** This controller, when used in conjunction with Aftertouch, will vary the vibrato speed. CC#17 can be assigned to an available slider or knob on a hardware keyboard to give real-time control. This controller data can also be "drawn" into MIDI tracks manually.

It is important to be aware that the vibrato features do not apply to any instruments with naturally recorded vibrato in the samples (such as stringed instruments). Instruments that have vibrato control will display a knob labeled "VibSpd(CC17)" in the Instrument Controls on the Controls tab of the interface.

Note:

M-Audio and some other keyboards often use CC#131 as a substitute for Aftertouch when the keyboard model doesn't have Aftertouch sensitivity built in. A programmable slider on the keyboard can be assigned to CC#131 and the keyboard will output Aftertouch data.

Hidden Pitchbend Defeat Controller, CC# 19: This controller is used on sustained string samples and the trombone to aid the creation of portamento effects when going from detached (non legato) playing to legato playing. This controller switches the instrument to a layer that does not respond to pitchbend data. This gives you the flexibility to draw pitchbend data between two notes that only has effect on the second note of the pair when carefully placed CC#19 data has also been added to the track. This can be used to help solve certain kinds of portamento problems.

Hidden Playable Trills/Wider Interval Tremolo Controller, CC# 15 (Strings): The Solo String Keyswitch instruments use CC#15 to control an alternative switching system for trills on Keyswitch notes G# and A. The standard Keyswitches (G# thru B) give you control over half-step and whole-step trills, plus their muted counterparts. The CC#15 controller extends trill intervals from a half-step to as wide as a major third using the following v

- 0-32 = half step
- 33-64 = whole step
- 65=96 = minor third
- 97-127 = major third

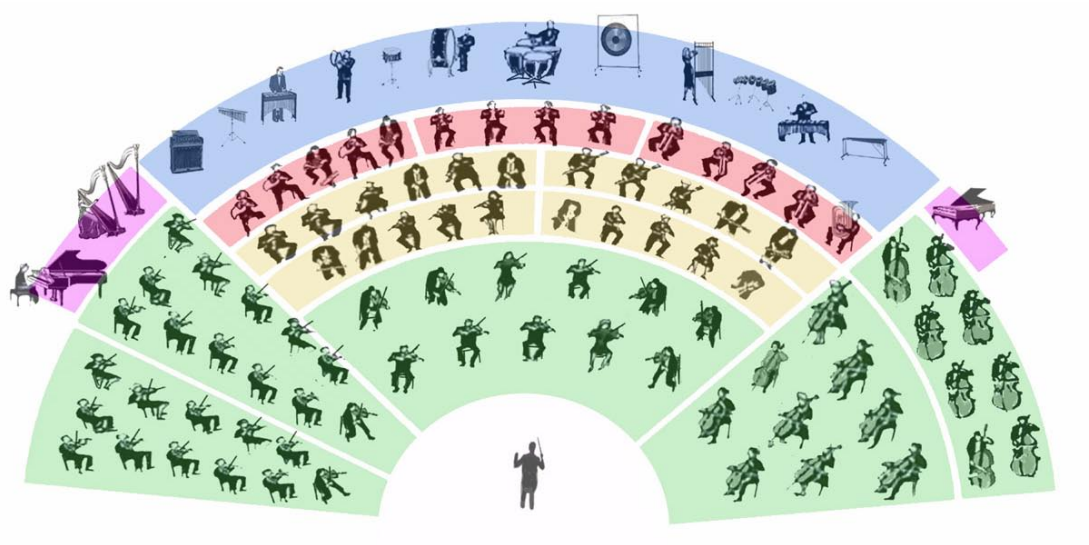
There are advanced controls for the various instruments detailed in the following sections.

Putting It All Together for a Real-Time Performance

The basic system is to use your right hand to control the attack of each note; Mod Wheel in the left hand, to control dynamics; and the sustain pedal with your foot to connect the notes. It couldn't be easier! With the more advanced controls you can fine tune your performance. This approach lets you play your articulations in real time in much the same manner as a player of the actual instrument does.

Using both hands and feet to perform the different tasks simultaneously requires some coordination. The key is to start simple and to realize that you do not have to do it perfectly the first time. The best way to learn is to practice playing just the notes with one hand. Learn the fingerings for the notes and apply the accents, where appropriate. Once you are acquainted with the notes and the accentuation scheme, gradually add the other controllers. For example, play a melody with the right hand. After a few practice runs try riding the Mod Wheel for expression too. Then add the sustain pedal for legato phrasing. Soon you'll develop coordination, and by combining the different controls in real-time you'll have an unlimited amount of expressive capabilities. Once you get the hang of it, you can play almost anything that comes to your musical imagination. Create ensembles of your choosing with individual instruments. By using the real-time performance controls to play each instrument with expressiveness, the final result can be extraordinary.

Building Sections from Individual Instruments



In orchestral scores, composers often write multiple parts for one type of instrument to achieve chords and harmony. With the larger sections, such as the strings, there can be many players on a single part. However, each individual player will still have his or her unique style and phrasing.

With Garritan Personal Orchestra, it is possible to simulate the individual players in an orchestra through a process called *Ensemble Building*. You build instrumental sections, one instrument at a time, exactly the way you want. You can position the players in almost any arrangement on the stage. You can play separate lines or play in unison, you can add more section instruments progressively for a climax, and do *divisi* lines. You can change the layout for a symphony orchestra, a baroque orchestra, or a chamber orchestra. Smaller groups such as concerto layouts, duos, trios, and quartets are also possible.

This is a unique and intuitive approach to MIDI orchestration.When you create a section from separate instruments performed and recorded individually, with variations in timing and expression, achieving a very realistic performance becomes much easier.

Garritan Personal Orchestra includes a very great number of instruments that can be employed as individual players in a section environment. Most instruments (brass, woodwinds, and solo strings) have derivative ensemble player (Plr) instruments. These are solo instruments designed for building ensemble sections. The Plr instruments can be used to create custom-sized ensembles while keeping

resource demands to a minimum. Ensemble instruments are panned to slightly different seating positions but can be changed according to the wishes of the user. The ensemble player (Plr) instruments do not share samples with each other and can therefore be played together without phasing problems (avoid mixing Solo and Plr patches of the same instrument, however). Personal Orchestra's large string section patches can often be convenient to use rather than building a large string section of your own. Nevertheless, multiple solo Plr string instruments will also allow you to create string sections of various sizes.

Example:

If you want a Horn section, load in the first, second and third ensemble player (Plr) horns to get your section. A second set of Plr horns will provide the fourth fifth and sixth players. The "overlays" can also be used to make the section sound even bigger, with greater control over brightness at loud levels. Thus, you can create your section playing in unison, playing separate parts or playing divisi with unique expression and phrasing from each loaded instrument.

When you start building sections from separate instruments, with all the instruments playing individually, it will sound incredibly realistic. To learn more see the Ensemble Building tutorials on the Garritan website at **www.garritan.com**.

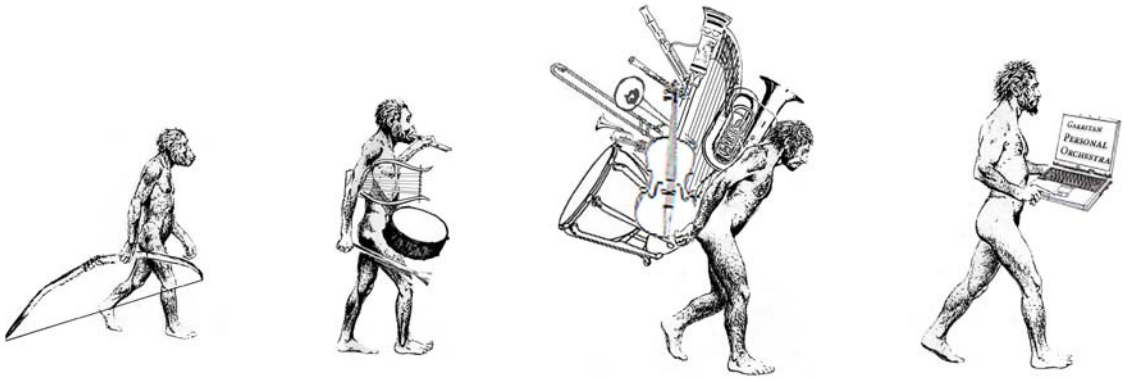
An Overview of the Orchestra

The orchestra as we know it today took centuries to evolve. Since the first cavemen learned how to produce sound, musicians have organized themselves into groups. An orchestra is a group of instrumentalists who play music together. The term is commonly used to describe a large ensemble composed of strings, woodwinds, brass, and percussion. The word "orchestra" itself derives from the Greek and refers to the semi-circular space in the front of the theater where performers stood. In a modern orchestra, the players are seated in a semi-circle facing the audience and the conductor.

The combining of instrumentalists into string, brass, woodwind and percussion sections is a relatively recent development in the evolution of the orchestra. Early orchestras first emerged over 400 years ago. They were often just an ad hoc group of musicians getting together and playing whatever instruments they had at hand. Small orchestras later accompanied operatic and theatrical performances and also played for royalty and the noble classes. In the 1600s and 1700s, the evolution of instruments

accelerated and by the nineteenth century, the variety and number of musical instruments led to the need for a conductor. The golden age of the orchestra was born, and the orchestra finally emerged from its supporting role into prominence. As cities grew, the demand for musical performances increased. Concert halls were built throughout Europe and North America to showcase the orchestra. People traveled for miles to see and hear an orchestra. Composers began writing longer, more complex works for larger and more varied groups of instruments. With a wider array of instrumentation and a growing body of musical works, the orchestra continued to flourish. By the twentieth century some orchestras comprised more than 100 full-time professional musicians. Today, most of the world's major cities have their own symphony orchestra, which has become a symbol of cultural pride. The finest orchestras tour foreign countries and serve as musical "ambassadors" for their respective countries. Contemporary composers write orchestral music for television, film, and interactive media, as well as the concert hall.

There are four main families of musical instrument in the modern orchestra: the strings, the woodwinds, the brass, and the percussion. Instruments within each family share common attributes and produce their sounds in a similar fashion. The strings are played with a bow or are plucked; the brass and woodwinds are blown; and the percussion instruments are struck.

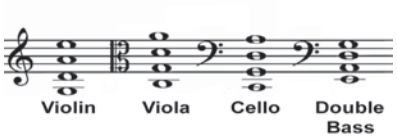


STRING INSTRUMENTS

The strings consist of four instruments—violin, viola, cello and double bass—and are grouped into sections bearing the names of the instruments. The stringed instruments look very similar, but differ in size and tone. Violins have the highest voices and the brightest tone; basses have the lowest voices and darkest tones, and the cellos and violas fall in-between. The stringed instruments all have four strings and produce sound the same way; by drawing a bow across the strings or by plucking with the fingers.

THE STRING FAMILY

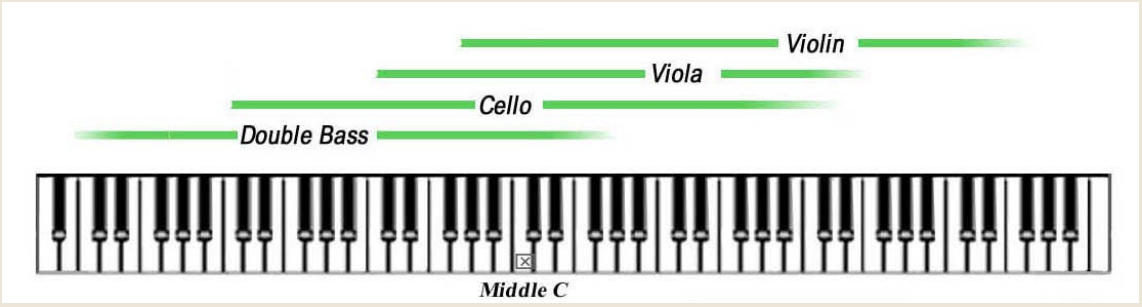
The four individual strings of each stringed instrument are each tuned as follows:



Note: Basses sound an octave lower than written.

PITCH RANGES—STRINGED INSTRUMENTS

It is important to be aware of the range (the highest and lowest notes available) of each instrument. Each stringed instrument has a particular pitch range. The chart below shows the typical ranges of the individual stringed instruments as they correspond to a piano keyboard. Virtuoso players can often play beyond the typical upper range of the instrument.



THE EXQUISITE STRINGED INSTRUMENTS IN PERSONAL ORCHESTRA

The stringed instruments in Garritan Personal Orchestra includes a pair of Stradivaris, a Guarneri, several Gaglianos, two Pierrays, two Montagnana cellos, a Testore, a Pallota viola, a Calcanius, a Klotz, a Vaillant, and a Betts, all of which were made in the seventeenth century. Visit **www.garritan.com** for a complete list of the stringed instruments in this collection. Amazingly, these stringed instruments have lasted hundreds of years and still have such a powerful and beautiful sound. The stringed instruments in the Garritan Personal Orchestra library are collectively worth millions of dollars, although the true value of any fine stringed instrument is in its sound, which is priceless. The sounds of these exquisite stringed instruments are now at your command.

Pictured above: A few of the actual Stringed Instruments Sampled in this Library. Stradivarius, Guarneri, Gagliano, Montagnana and Pallotta

Playing Personal Orchestra Strings:

Aside from being sampled from some of the world's finest instruments, the string patches in Garritan Personal Orchestra are programmed in a way that allows for playability and customization. The solo patches of each member of the string family are included in the library as well as keyswitch patches. The keyswitch patches incorporate the most commonly used string articulations into one patch, with the articulations activated by a key outside the playable range of the instrument. Aside from the standard solo patches and keyswitch patches, Garritan Personal Orchestra includes multiple ensemble string patches, each programmed in a way that allows you to build custom string sections. These ensemble patches are useful in creating unison and divisi lines where control over each instrument in the section is desired. There are buildable ensembles for each member of the string family. For more information on ensemble building, see the previous section on "Building Sections from Individual Instruments" in this manual.

Garritan Personal Orchestra also includes prebuilt string sections for every member of the strings family. These section samples include sustained/legato, pizzicato, trills, tremolo, muted, and short bow articulations. There are also keyswitch instruments that combine these articulations into one patch. The articulations in the keyswitch patches are activated by a key outside the normal range of these instruments. Also included in Personal Orchestra are full section patches that include all stringed family instruments grouped together as a way to audition sounds without loading each

instrument section separately. Aggressive patches for the short bow and sustained string patches are included for when a more aggressive sound is needed. These patches should be used when a brighter or harder articulation is desired as the sound of the attack is greater with these instruments.

In order to obtain the best results when using Garritan Personal Orchestra it is imperative to use the built-in programming for the samples. While the samples are certainly playable without understanding the programming behind them, it is only when the programming is understood and utilized that your string solo and ensemble passages will truly come alive. Listed here is the programming included in Personal Orchestra's solo and ensemble string samples and how it is activated with common midi controllers.

Basic Controls

Velocity – Attack and Volume (non-sustain only)

Velocity is used to control the initial 'note on' attack strength on all sustained/legato solo and ensemble string patches. This attack equates into how hard the bow strikes the string. Velocity is also used to control volume/timbre on short bow and pizzicato patches.

Modulation Controller CC# 1 – Volume (sustain only)

This controller is used to the control volume and timbre characteristics of all sustained/legato solo, ensemble, section and full string patches. Playable with your keyboard's mod wheel or external controller surface. Can also be drawn in your sequencer tracks by hand.

Legato Controller CC# 64 – Legato

This controller is used to create legato lines. You can use and external sustain pedal to control the legato function or it can be entered in your sequencer by hand. Pedal up (CC64 0-63) is detache, pedal down (CC64 64-127) for legato. Alternatively, you could use the Auto-Legato feature.

Portamento Controller CC# 20

This controller is used to create portamento during legato passages based on note intervals and CC value. The closer the notes the higher the portamento value used. Inversely, the larger the interval between notes, the lower the portamento value used. Notes further than an octave apart typically do not use portamento. This controller can be used only in conjunction with legato playing when the sustain pedal controller is active.

Length Controller CC# 21

This controller is used to shorten or lengthen the release/decay of the samples. When used with the short bow patches this controller is useful for creating the effect of marcato articulations or can inversely give the effect of lighter bowstrokes in a sautille fashion. When using this controller with sustained strings higher values of cc#21 can useful for getting smoother legato lines by increasing note overlap due to sample release times being increased. Most instruments load with this controller set to a moderate level by default.

Variability Controllers CC#'s 22 & 23

CC# 22 controls the intonation of the notes and is useful during repeated note phrases. This control should be used in moderation. CC# 23 controls variations in timbre/volume for the solo and ensemble patches and is useful in repeated note phrases to reduce the appearance of the 'machine gun' effect.

Additional Programming:

Hidden Pitchbend Defeat Controller CC# 19

This controller is used on all sustained string samples to aid the creation of portamento effect when going from detached (non legato) playing to legato playing. This controller switches to a layer that does not respond to pitchbend data. This gives the user the flexibility to draw pitchbend data between two notes, but only having an effect on the second note of the pair when carefully placed cc#19 data has been added to the track. This helps solve certain kinds of portamento problems.

Hidden Playable Trills/Bow Noise Controller CC# 16

This controller has two functions that are patch specific. When used with the AG (aggressive) short bow patches this controller controls bow noise and can be used to add 'grit' to the sound of the patch. The Solo keyswitch strings use cc#16 to control an alternative switching system for trills on keyswitch notes G# and A. The standard keyswitches (G# thru B) give the user control over half-step and whole-step trills plus their muted counterparts. The cc#16 controller extends switching to intervals from a half-step to as wide as a major third using the following values:

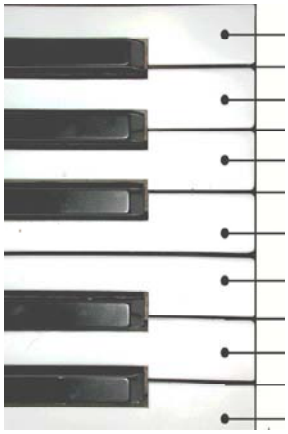
0-32 = half step

33-64 = whole step

65=96 = minor third

97-127 = major third

Keyswitch Assignments for the Solo String Keyswitch patches:



B (8ve) = Playable whole step trills
A# (8ve) = Playable whole step muted trills
A (8ve) = Playable trills with ½ step as default (intervals selectable with cc16)
G# (8ve) = Playable ½ step muted trills as default (intervals selectable with cc16)
G (8ve) = Playable tremolo
F# (8ve) = Playable tremolo mute
F (8ve) = Pizzicato
E (8ve) = Downbows
D# (8ve) = Upbows
D (8ve) = Automatically alternating up and downbows
C# (8ve) = Sustain mute (legato with sustain pedal)
C (8ve) = Sustain (legato with sustain pedal)

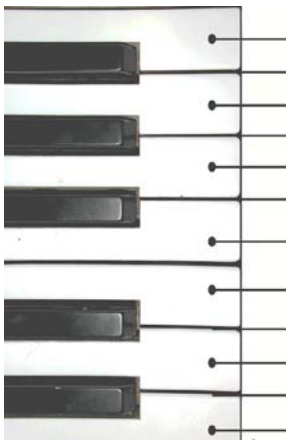
Keyswitch Assignments for Solo and Section String Keyswitch patches:

Note:

When using the short bow patches in Garritan Personal Orchestra, there are hidden keyswitches that allow the user to use the precise bow direction needed. If control over bow direction is needed or desired, this is attainable with these keyswitches. The mapping for this function is as follows:

E (8ve) = bow stroke 2
D# (8ve) = bow stroke 1
D (8ve) = automatically alternating bow strokes

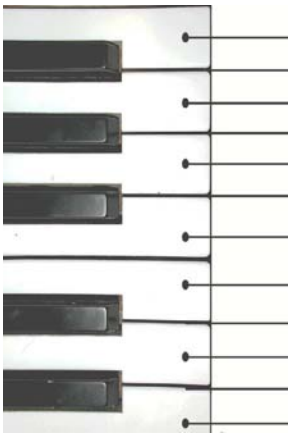
Keyswitch assignments for the Section and Full String keyswitch patches:



B (8ve) = Whole step trills (legato with sustain pedal)
A# (8ve) = Whole step trills mutes (legato with sustain pedal)
A (8ve) = Half step trills (legato with sustain pedal)
G# (8ve) = Half step trills mutes (legato with sustain pedal)
G (8ve) = Tremolo (legato with sustain pedal)
F# (8ve) = Tremolo mutes (legato with sustain pedal)
F (8ve) = Pizzicato
E (8ve) = Downbows
D# (8ve) = Upbows
D (8ve) = Automatically alternating up and downbows
C# (8ve) = Sus+short mutes (legato with sustain pedal)
C (8ve) = Sus+short (legato with sustain pedal)

Note:

The keyswitch assignments will vary depending on instrument Solo string keyswitch assignments are similar, with the exception of the tremolos and trills which are "playable" and do not contain the extra cc#16 controller for larger intervals:



B (8ve) = "Playable" whole step trills (legato with sustain pedal)
A# (8ve) = "Playable" whole step trills mutes (legato with sustain pedal)
A (8ve) = "Playable" half step trills (legato with sustain pedal)
G# (8ve) = "Playable" half step trills mutes (legato with sustain pedal)
G (8ve) = "Playable" tremolo (legato with sustain pedal)
F# (8ve) = "Playable" tremolo mutes (legato with sustain pedal)
F (8ve) = Pizzicato
E (8ve) = Downbows
D# (8ve) = Upbows
D (8ve) = Automatically alternating up and downbows
C# (8ve) = Sus+short mutes (legato with sustain pedal)
C (8ve) = Sus+short (legato with sustain pedal)

*(8ve) represents the octave (always below the range of the instrument).

- **Pitch Bend**
  This controller can be used to add 'scoops' or 'drops' to the solo violin at the beginning or ending of notes or passages. Especially useful for fiddling. Can be used in conjunction with the portamento controller (CC# 20).

More information about the stringed instruments in Personal Orchestra including specific tutorials can be found at **www.garritan.com**.

THE WOODWIND INSTRUMENTS

The Woodwind family consists of a wide variety of instruments, each with its own unique sound. These instruments include varieties of flutes, oboes, clarinets, and bassoons. Quality woodwind instruments sampled in Personal Orchestra include Haynes flutes, Selmer clarinets and Heckel bassoons.

Most of the woodwind instruments really are made of wood and some are made of metal (the flutes, historically, were made of wood but are now made with metal). Woodwind instruments produce their sound by having air blown through a hollow tube. Holes along the length of the body are opened or closed using the fingers (or small pads that are part of a keyworks mechanism), producing varying pitches. With the exception of the flute family, woodwind instruments require reeds to produce their sound.

Whereas the four members of the string family produce sounds in a similar fashion, woodwinds produce their sound differently from one another. As a result, the bassoon has a very different tone than a flute and neither resembles the sound of a clarinet.

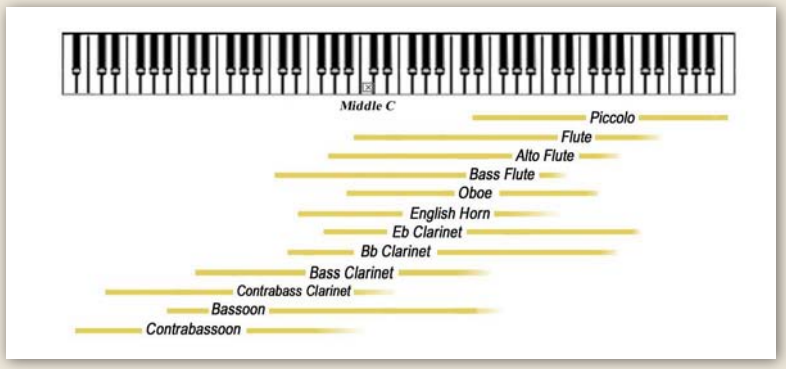
THE WOODWIND FAMILY

The woodwind instruments in Garritan Personal Orchestra:

Pictured left to right: Piccolo, Concert Flute, Alto Flute, Bass Flute, Oboe, English Horn, Eb Clarinet, Bb Clarinet, Bass Clarinet, Contrabass Clarinet, Bassoon, Contrabassoon.

PITCH RANGES – WOODWIND INSTRUMENTS

The chart below shows some of the typical ranges of the individual woodwind instruments as they correspond to a piano keyboard. These ranges are not absolute and virtuoso players can often play beyond the typical upper range of the instrument.



Playing Personal Orchestra Woodwind Instruments:

The wind instruments samples in Garritan Personal Orchestra are expressive and beautiful. Whether you choose to use them in a solo context, in small intimate ensembles, or in vast orchestral pieces, they are built to suit your every need quickly and painlessly. Included in the library are solo and ensemble versions of all the major instruments in the wind instrument family with some surprises that you would expect from larger, more expensive libraries. For playability there are keyswitch versions of the flute and piccolo flute.

In order to obtain the best results when using Garritan Personal Orchestra it is imperative to use the built in programming for the samples. While the samples are certainly playable without understanding the programming behind them, it is only when the programming is understood and utilized that your woodwind passages will truly come alive. Listed here is the programming included in Personal Orchestra's solo and ensemble woodwind samples and how it is activated with common midi controllers.

Basic Programming:

Velocity – Attack

Velocity is used to control the initial 'note on' attack on all sustained/legato solo and ensemble woodwind patches. This attack equates into how forceful the instrument is played. Note: Velocity is only active on the pedal 'up' layer of the instrument. The pedal 'down' layer has no attack on the note start.

Modulation Controller CC# 1 – Volume/Timbre

This controller is used to the control volume and timbre characteristics of all sustained/legato solo and ensemble woodwind patches. Playable with your keyboard's mod wheel or external controller surface, or can also be drawn in your sequencer by hand.

Slurred/Legato Controller CC# 64

This controller is used to create properly articulated tongued and slurred lines. You can use an external sustain pedal to control the slur (legato) function or it can be entered in your sequencer by hand. Pedal up (CC64 0-64) is tongued, pedal down (CC64 65-127) for slurred (legato). Alternatively, the Auto-Legato feature can be used.

Portamento Controller CC# 20

This controller is used to create portamento during legato passages based on note intervals and CC value. The closer the notes, the higher the portamento value used. Inversely, the larger the interval between notes, the lower the portamento value used. Notes further than an octave apart typically do not use portamento. This controller can be used only in conjunction with legato playing when the sustain pedal controller is active.

Length Controller CC# 21

This controller is used to shorten or lengthen the release/decay of the samples. This controller can be used to improve emulation of double and triple tonguing in the woodwinds. Most instruments load with this controller set to a moderate level by default.

Variability Controllers CC#'s 22 & 23

CC# 22 controls the random variability of intonation of the notes and is useful during repeated note phrases. This control should be used in moderation. CC# 23 controls random variations in timbre for the solo and ensemble patches and is useful in repeated note phrases to reduce the appearance of the 'machine gun' effect.

Additional Programming:

Hidden Vibrato Intensity Controller (Aftertouch)

Many of the non-vibrato solo woodwinds have a hidden vibrato intensity controller to allow the user to apply the level of vibrato to the instrument. The intensity controller controls the level of vibrato. This controller does not apply to the instruments that contain natural vibrato and only applies to instruments that have a non-vibrato choice (shown NV.) This controller has also been added to some instruments that do not normally have vibrato (the clarinet or

French horn.) To be used along with the Vibrato Speed controller CC# 17. This controller can be drawn in by hand or can be activated with a keyboard that has Aftertouch sensitivity.

Vibrato Speed Controller CC# 17

This controller when used in conjunction with the vibrato intensity controller will vary the vibrato speed of those instruments that normally contain no vibrato. As before, this would not affect instruments that have natural vibrato and will apply only to non-vibrato patches (shown NV.) To be used along with the Vibrato Intensity Controller (aftertouch).

Keyswitch Assignments for the Woodwinds Keyswitch patches:

There are only two keyswitch patches in the woodwind library, the flute and piccolo flute. This allows the user to switch between the natural vibrato and non-vibrato choices of these instruments on the fly. These keyswitches are as follows:

C(8ve) = Vibrato
D(8ve) = Non-vibrato
E(8ve) = Flutter

(8ve) represents the octave (always below the range of the instrument).

Note:

The keyswitch assignments will vary depending on instrument.

More information about the woodwind instruments in Personal Orchestra including specific tutorials can be found at **www.garritan.com**.

THE BRASS INSTRUMENTS

The brass instruments in a modern orchestra include variations of the French horn, the trumpet, the trombone, and the tuba. Each possesses a unique color and range, from the bright piercing sound of the trumpet to the deep, dark tones of the tuba. The brass section is typically seated between the woodwind and percussion sections.

Similar to the woodwind instruments, sounds are produced by air being blown into a funnel-shaped mouthpiece connected to a hollow metal tubing that terminates in a bell. Holes in the tubes are opened and closed by valves or a slide, which produce changes in pitch. The vibrating lips of the player have the same function as the reeds in the woodwind instruments.

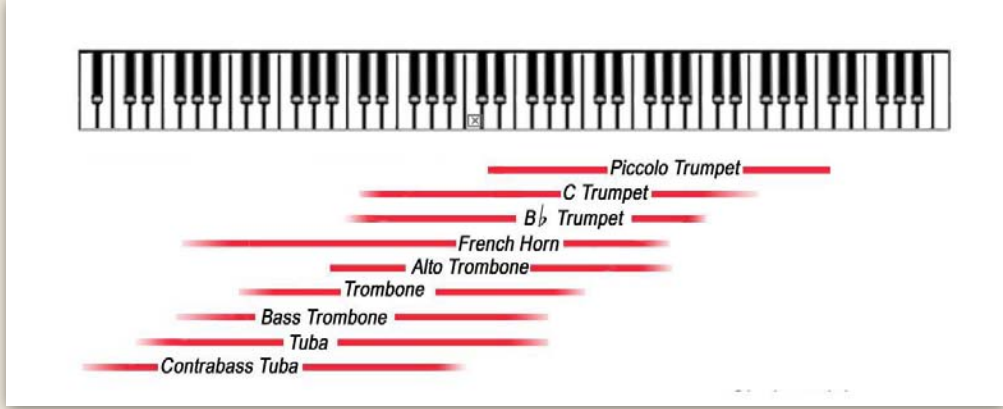
THE BRASS FAMILY

The brass instruments in Garritan Personal Orchestra:

Pictured left to right: Piccolo Trumpet, Bb Trumpets, French Horn, Tenor Trombone, Alto Trombone, Bass Trombone, Tuba, and Contratuba.

PITCH RANGES – BRASS INSTRUMENTS

The chart below shows the typical ranges of the individual brass instruments as they correspond to a piano keyboard. These ranges are not absolute and virtuoso players can often play beyond the typical upper range of the instrument. Good brass players can also play pedal tones. Pedal tones are notes that lie below the natural range of an instrument and take a great deal of control to produce.



Playing Personal Orchestra Brass Instruments:

The brass in Garritan Personal Orchestra has been exquisitely captured and allows for a very dynamic brass section in your midi orchestration. In addition to the standard solo patches included in Personal Orchestra, there are also ensemble patches that allow the midi orchestrator to custom size his brass section to meet the need of the composition. In addition to these ensemble instruments there are brass overlays, mutes, as well as aggressive patches. The overlays are used to create a larger brass sound while the aggressive patches are useful in adding a punch to the brass section by increasing the hardness of the attack. For more information about the ensemble building feature of Garritan Personal Orchestra, see the previous section on "Building Sections from Individual Instruments" in this manual.

In order to obtain the best results when using Garritan Personal Orchestra it is imperative to use the built-in programming for the samples. While the samples are certainly playable without understanding the programming behind them, it is only when the programming is understood and utilized that your brass passages will truly come alive. Listed here is the programming included in Personal Orchestra's solo and ensemble brass samples and how it is activated with common midi controllers.

Basic Programming:

Velocity – Attack

Velocity is used to control the initial 'note on' attack strength on all sustained/ legato solo and ensemble brass patches. This attack equates into how forcefully the player releases the air column to begin the note.

Modulation Controller CC# 1 – Volume/Timbre

This controller is used to the control volume and timbre characteristics of all sustained/legato solo and ensemble brass patches. Playable with the mod wheel or external controller surface, or can also be drawn in your sequencer by hand.

Legato Controller CC# 64

This controller is used to create properly articulated tongued and slurred lines. You can use and external sustain pedal to control the legato function or it can be entered in your sequencer by hand. Pedal up (CC64 0-63) is tongued, pedal down (CC64 64-127) for legato. Alternatively, the Auto-Legato feature can be used.

Portamento Controller CC# 20

This controller is used to create portamento during legato passages based on note intervals and CC value. The closer the notes, the higher the portamento value used. Inversely, the larger the interval between notes, the lower the portamento value used. Notes further than an octave apart typically do not use portamento. This controller can be used only in conjunction with legato playing when the sustain pedal controller is active.

Length Controller CC# 21

This controller is used to shorten or lengthen the release or decay of the samples. This controller is useful for creating *Sforzando* articulations when using the aggressive brass patches or for getting a staccato sound. It can also be valuable in helping to create convincing double and triple tonguing passages.

Variability Controllers CC#'s 22 & 23

CC# 22 controls the intonation of the notes and is useful during repeated note phrases. This control should be used in moderation. CC# 23 controls variations in timbre/volume for the solo and ensemble patches and is useful in repeated note phrases to reduce the appearance of the 'machine gun' effect.

Additional Programming

Hidden Vibrato Intensity Controller (Aftertouch):

Many of the non-vibrato solo brass instruments have a hidden vibrato intensity controller to allow the user to apply the level of vibrato to the instrument. The intensity controller controls the level of vibrato. This controller does not apply to the instruments that contain natural vibrato and only applies to instruments that have a non-vibrato choice. This controller has also been added to some instruments that do not normally have vibrato (French horn.) To be used along with the Vibrato Speed controller CC# 17. This controller can be drawn in by hand or can be activated with a keyboard that has aftertouch sensitivity.

Vibrato Speed Controller CC# 17:

This controller when used in conjunction with the vibrato intensity controller will vary the vibrato speed of those instruments that normally contain no vibrato. As before, this would not affect instruments that have natural vibrato and will apply only to non-vibrato patches. To be used along with the Vibrato Intensity Controller (Aftertouch.)

Hidden Pitchbend Defeat Controller CC# 19

This controller is used on the solo trombone samples to aid the creation of portamento when going from detached (non legato) playing to legato playing. This controller switches to a layer that does not respond to pitchbend data. This gives the user the flexibility to draw pitchbend data between two notes, but only having an effect on the second note of the pair when carefully placed cc#19 data has been added to the track. This helps solve certain kinds of portamento problems.

Saturation Controller CC# 16

This controller is used in conjunction with the aggressive brass patches (denoted AG) to add more forcefulness and 'grit' to the sound of these patches.

Pitch Bend

This controller can be effectively used with the solo trombone patches to create 'scoops' or 'drops' at the beginning of notes or passages. Can be used in conjunction with the other portamento controllers (CC# 20 & 19).

Keyswitch Assignments for the Brass Keyswitch patches:

Keyswitches in the brass give the user the ability to switch between open and muted versions of the instruments. These keyswitches are as follows:

C (8ve) = Open
D (8ve) = Muted

(8ve) represents the octave (always below the range of the instrument).

Note:

The keyswitch assignments will vary depending on instrument.

The Overlays:

The brass instruments have "Overlay" instruments, sampled at the *f* or *ff* level that can be layered with the solo and ensemble instruments to achieve a fuller, more massive section sound. The trumpets, trombones, and tubas each have one Overlay instrument and the French horns have two. In general, the Overlay instruments can be used to:

- **Add "body" and resonance to the sound of a brass section.** This can affect the apparent size of the section—making it sound larger.
- **Increase the contrast in timbre from soft to loud.** The contrast increases as you add more Overlay. The soft end of the spectrum becomes mellower, the loud end becomes brighter and brassier.
- **Give the impression of a larger section size** while using fewer resources, consuming fewer instrument slots within a Personal Orchestra instance.
- **Give greater control over strong articulations.** The French horns have two Overlay instruments (*f* and *ff*) because the horns often require a large range of timbre variation in typical orchestral writing. The combination of Solo and Player (Plr) instruments with either or both Overlays can create a large variety of characteristics.

More information about the brass instruments in Garritan Personal Orchestra including specific tutorials can be found at www.garritan.com.

Project Sam Brass:

This newest version of Garritan Personal Orchestra now has more brass instruments. A selection of Project SAM brass samples are now included. Project SAM is the most respected orchestra brass samples on the market. Included are samples from SAM Horns, SAM Trombones, SAM Trumpets and SAM Solo Sessions. Known for its ambient, cinematic sound, Project SAM Brass instruments are regularly used in film, TV and music. For Personal Orchestra, the Project SAM brass sections and solo instruments were streamlined and programming modified to blend with the other Personal Orchestra instruments and were then optimized for the ARIA player.

Special pricing is available to Personal Orchestra users who want to upgrade to the full Project SAM Orchestral Brass Classic.

THE PERCUSSION INSTRUMENTS

The Percussion instruments are often the loudest members of the orchestra and are seated at the back of the orchestra. The instruments of the percussion family are played by being hit, shaken or scraped. Percussion literally means "hitting of one body against another." The percussion section provides a variety of rhythms and tonal textures in an orchestra. It is also the most varied section, and since there are many different percussion instruments, players often master a variety of instruments.

THE PERCUSSION FAMILY

The **pitched** percussion instruments in Personal Orchestra:

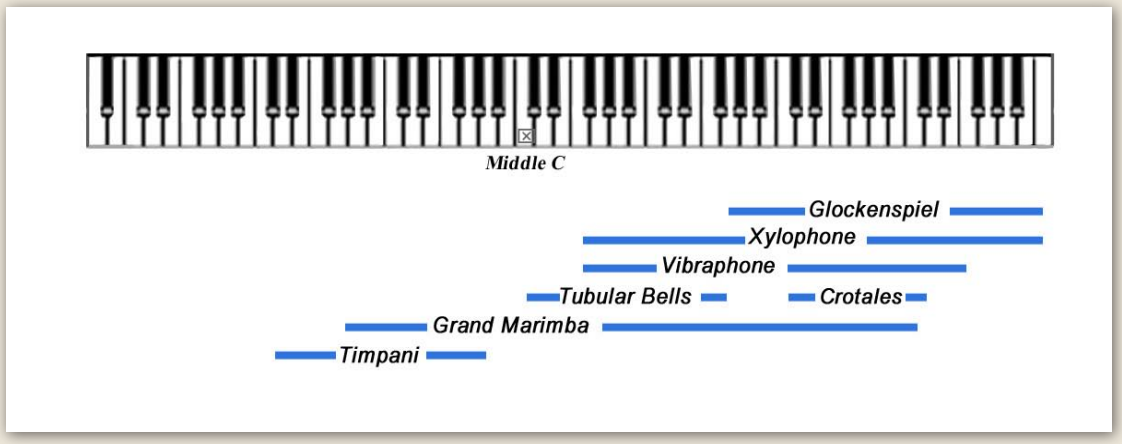
Pictured left to right: Timpani, Tubular Bells, Glockenspiel, Xylophone, Vibraphone, Grand Concert Marimba.

Some of the **unpitched** percussion in Personal Orchestra:

Pictured left to right: Bass Drum, Gong, Toms, Mark Tree, Snare Drum, Triangle, Orchestral Cymbals, Handbells, Maracas, Tambourine, Castanets

PITCH RANGES – PITCHED PERCUSSION INSTRUMENTS

Percussion instruments are divided into two groups: pitched and unpitched. Unpitched instruments have an indefinite tone—like a hand clap or thud—such as the bass drum, snare drum, maracas, cymbals or gong, to name but a few. Pitched instruments, such as the xylophone, timpani, marimba, tubular bells, and others play specific pitches. The chart below shows the ranges of the individual pitched percussion instruments as they correspond to a piano keyboard. Unlike the other instruments of the orchestra, these ranges are absolute, and players cannot usually play beyond the range of the instrument.



Playing Personal Orchestra Percussion Instruments:

Garritan Personal Orchestra has a varied collection of percussion instruments at your disposal. Almost all of Personal Orchestra's percussion instrument patches are keyswitch instruments with the exception of the cymbals, wind machine, and the basic orchestral percussion combo patch. The combo patch combines the commonly used orchestral percussion into one patch.

The programming in Personal Orchestra's percussion is not as involved as that as of the sustained instruments due to the nature of these instruments. Some of these controllers are universal across all percussion instruments while some pertain to select instruments or types of instruments.

Basic Programming:

Velocity – Attack Volume

All percussion instruments included in Garritan Personal Orchestra use velocity for attack and volume control.

Length Controller CC# 21 – Sample Length

This continuous controller allows the user to manually adjust sample release/decay time. This controller is not available for all percussion instruments.

Modulation Controller CC#1– Percussion Roll Volume (for actual recorded rolls)

The modulation control for the percussion instruments that use it works in a similar manner as the sustained instruments. There are four percussion instruments in Personal Orchestra that use the mod wheel for rolled crescendos/decresendos when the proper note is played. These are the cymbals, snare drum, and bass drum. The wind machine also uses mod wheel control of volume. The more mod wheel data applied to these instruments the louder the 'roll'.

Controller CC# 64 – Dampening

In most other instruments in Personal Orchestra this controller is used either for legato or note sustaining. Percussive instruments use the sustain pedal for standard sustain while in "Pedal mode 2." The vibraphone adds a second instrument choice that can function in standard "Pedal mode 1," at the expense of keyswitching.

Variability Controllers CC#'s 22 & 23

CC# 22 controls the intonation of the notes and is useful during repeated note phrases. This control should be used in moderation. CC# 23 controls variations in timbre/volume for the affected percussion patches and is useful in repeated note phrases to reduce the appearance of the 'machine gun' effect. **Note:** *Not all percussion instruments use these controllers.*

Instrument Specific Programming:

Bass Drum:

Controller CC#20 – Bass Drum Fundamental

Although the bass drum is an instrument of indefinite pitch, its tone is very deep and booming and capable of being adjusted. The bass drum in Personal Orchestra has an adjustable fundamental that is controlled by a knob designated "BDFund" in the controller section of the ARIA Player. This control can add a great deal of energy to extremely low frequencies, so use it with care.

Controller cc#16 – Aggressive Brightness

Advancing this controller can give the impression of harder mallets being played aggressively.

Vibraphone:

Controller CC#20 – Attack

For the vibraphone this controller controls the vibraphone's attack speed. This allows continuous control of the vibraphone's attack speed from hard to 'bowed' attacks. This controller will be labeled as ATTACK on the ARIA Player interface.

Controller CC#22 – Tremolo Level

For the vibraphone this controller controls the level of tremolo and allows control of the vibraphone's tremolo level. This controller is to be used in tandem with CC# 23, tremolo speed. This controller will be labeled as TRMLEV on the ARIA Player interface.

Controller CC#23 – Tremolo Speed

For the vibraphone this controller controls the speed of the tremolo. This allows continuous control of the vibraphone's tremolo speed. This controller is to be used in tandem with CC# 22, tremolo level. This controller will be labeled as TRMSPD on the ARIA Player interface.

The Keyswitch Percussion Instruments:

As discussed earlier, almost all of Personal Orchestra's percussion patches are keyswitch instruments. The instruments load defaulted to single hits, but when the "D"keyswitch is activated the notes play followed by a release trigger of the same note making it possible to play single note 'rolls'. These rolls can be played in realtime and timing and speed can be varied according to need. It is recommended that when using this function that the variability controllers are used as well to reduce the 'machine gun' effect. Exceptions to this are instruments that normally do not play rolls. These keyswitch patches are activated as follows:

C(x) = standard single hits as before
D(x) = playable release trigger rolls

In addition to this, the timpani patch in Personal Orchestra has left and right hand samples that allow the user to play in rolls. The left and right hand samples are the same pitches, but an octave apart.

More information about the percussion instruments in Personal Orchestra including specific tutorials can be found at **www.garritan.com**.

THE KEYBOARD INSTRUMENTS AND THE HARP

The harp is an ancient instrument that dates back to antiquity. Many keyboard instruments evolved from the harp. The harp consists of a series of strings stretched over a triangular frame. The harp is played by plucking the strings with the fingertips. The concert harp has seven pedals, each one representing a note of the scale. The pedals adjust the length of the strings, with all its octaves, either a semitone up or down. The harp can have a range of up to seven octaves. Harps are known for rapid arpeggiated runs and glissandi, which create distinctive color. The two harps that are included in the Garritan Personal Orchestra collection are a Venus Grand Concert harp and a Wurlitzer Concert harp, circa 1920s.

Various keyboard instruments are often included in orchestras. Keyboards have a standard chromatic key arrangement of black and white keys playing notes a semitone apart. Keyboards have been with us for over 600 years after first appearing in organs and later the clavichord, harpsichord and piano.

In Garritan Personal Orchestra, high-quality keyboard instruments were sampled. A Steinway® Concert Grand Piano was sampled at two dynamic levels (Steinway® name used by permission). The harpsichord is a double manual French harpsichord, built by Hubbard, and the celesta was manufactured by Mustel. The Concert Pipe Organ is a German Baroque pipe organ built by Rudolf von Beckerath. It has three manuals and pedals, containing 11 individual stops.

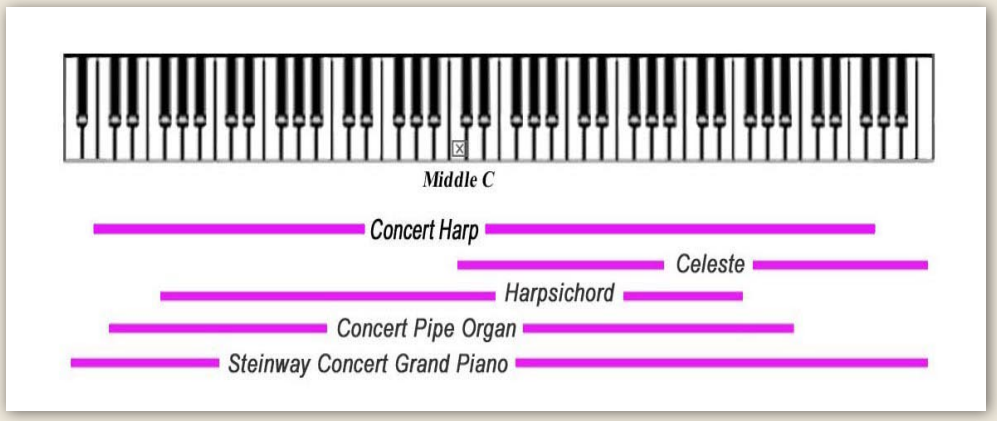
THE KEYBOARDS AND HARP

Keyboards and Harps in Garritan Personal Orchestra:

Pictured left to right: Concert Grand Harp, Steinway® Concert Grand Piano, Harpsichord, Celeste, Rudolf von Beckerath Concert Pipe Organ.

PITCH RANGES – KEYBOARD AND HARP INSTRUMENTS

The keyboards can have the widest range in an orchestra. The chart below shows the ranges of the keyboard instruments of Personal Orchestra as they correspond to a piano keyboard.



Playing the Personal Orchestra Keyboard & Harp Instruments:

It has been said that the keyboard and harp instruments included in Garritan Personal Orchestra could stand alone in libraries of their own. It is true that these instruments are among the finest quality and complete this libraries vision of offering an orchestra for every musician.

The Steinway Grand Piano

This is perhaps the easiest instrument to play of Garritan Personal Orchestra. The programming is the easiest to grasp and allows for a fully functional concert piano experience. Included in Garritan Personal Orchestra is a Steinway Grand piano patch as well as two piano duo instruments that are meant for duo piano pieces, as well as a lite version of the full piano patch when instrument auditioning is needed. For those who wish to have a more detailed concert grand piano, the Authorized Steinway Virtual Concert Grand Piano may be of interest. The Authorized Steinway Virtual Concert Grand Piano was developed in partnership with Steinway & Sons and provides many more features than the piano in Personal Orchestra. For more information about the Authorized Steinway Virtual Concert Grand Piano go the www.garritan.com/Steinway.html.

Basic Programming:

Velocity – Note Attack and Volume

The pianos note attack and volume is controlled by velocity. You have the full spectrum of dynamics attainable through this controller from *ppp* to *fff*.

Sustain Pedal Controller CC# 64

When using the Sustain Pedal Controller you are able to play the piano with sustains, just like a real piano. This controller will only work when the proper options are enabled within Garritan Personal Orchestra.

The Harpsichord

The harpsichord's programming is also simple, yet effective. On top of the simple programming all the 'stops' are available on one patch through a keyswitch.

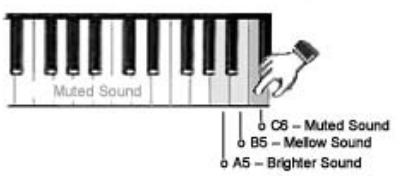
Basic Programming:

Velocity – Note Attack and Volume

The harpsichord note attack and volume is controlled by velocity. You have the full spectrum of dynamics attainable through this controller from *ppp* to *fff*.

The Harpsichord Keyswitch Assignments:

The harpsichord uses a keyswitch to select between its different stops. The instrument loads defaulted to the 8' Stop. The A(5) = 8' Stop, B(5) = 8' + 4' Stop and C(6) = Buff Stop. Below are the keyswitch assignments and what stops they represent:



The Harps

Because of the way a harp is played Garritan Personal Orchestra offers different types of harp patches. There are the standard chromatic harp instruments for single plucked notes, the glissando harps to emulate harp glissandos, the harp harmonics patches for harp effects to add realism, and the harp keyswitch instruments so that the user has access to all these types of patches in one convenient instrument.

Basic Programming:

Velocity – Note Attack and Volume

The harp note attack and volume is controlled by velocity. You have the full spectrum of dynamics attainable through this controller from *ppp* to *fff*.

Sustain Pedal Controller CC# 64 – Damping

When using the sustain pedal controller in legato mode you can dampen the plucked notes of the chromatic harp by inserting pedal down data into your sequencer or when playing live.

Additional Programming:

Glissando Harp - MIDI Data Packets:

The Glissando Harp instrument maps notes to the white keys of the keyboard and uses MIDI data packets to emulate the pedal positions of a harp. The white keys of the keyboard can be "strummed" to achieve realistic glissandi. The Glissando MIDI data files contain a wide range of harp scales and chord types in all keys that will allow you to play runs and glissandi. They are easy to use: just copy a packet to a secondary track with the same MIDI channel as the harp. Place each packet slightly in advance of the position of the desired scale or chord change. Glissandi played from the keyboard will change automatically at the packet position.

The Harp Keyswitch Assignments:

- C (8ve) = Chromatic harp
- D (8ve) = Glissando harp
- E (8ve) = Harmonics

The Concert Pipe Organ

The organ does not use velocity to control the volume/timbre characteristics of the instrument. Since the pipe organ is controlled by wind pressure from the bellows, this works quite well and lends to a more satisfying experience when playing live. There numerous organ patches in Personal Orchestra all have a unique and particular sound. Extra controls have been added to the pipe organ instruments to increase tonal possibilities. Using the programming listed below you should be able to create convincing organ pieces quickly and efficiently.

Basic Programming:

Velocity – Note Attack

Velocity only controls the note attack on the organ.

Modulation Controller CC# 1 – Volume/Timbre

The modulation controller (MW) controls the volume and timbre dynamics of the organ. This affords greater dynamic control of the organ. This controller can be played in live or drawn in a sequencing program.

Organ Fundamental Controller CC# 20

This controller controls the fundamental strength of the organ patches. This controller is especially useful in the pedal instruments. This controller works similarly to the Bass Fundamental controller for the Bass Drum. This controller will be labeled FUND on the ARIA Player interface.

Organ Filter Strength Controller CC# 22

This controller when used in conjunction with CC# 23 (filter frequency) allows the user to boost certain frequencies of the organ. This controller will be labeled FILTLV in the ARIA Player.

Organ Filter Frequency Controller CC# 23

This controller when used in conjunction with CC# 22 (filter strength) allows the user to boost certain frequencies of the organ. This controller will be labeled FILTFQ in the ARIA Player.

The Celesta and Glass Armonica

These two instruments share similar programming but give entirely different sounds. The celeste is a beautiful bell sounding instrument while the rare glass armonica is a sound unique unto itself.

Basic Programming:

Velocity – Note Attack

Velocity only controls the note attack on the celeste and glass armonica.

Sustain Pedal Controller CC# 64 – Dampening

When this controller is used in legato mode this controller acts to dampen the notes played on the celeste and glass armonica.

www.americanmusical.com

LIST OF INSTRUMENTS

Directory of Instruments in Personal Orchestra

The following directory gives the name and a brief description of the orchestral instrument sounds contained in Garritan Personal Orchestra. There is also a chart of the controllers available for each Personal Orchestra instrument.

CONTROLLERS	
SusLeg	Sustain Pedal legato control
Sus (sus)	Sustain Pedal for normal sustain control
SusDp	Sustain Pedal with damping control
MW	Mod Wheel Expression Control
Vel	Note Velocity for Accents and Attack
Vel (vol)	Note Velocity for Volume control
VAR 1	Automatic variability of intonation
VAR 2	Automatic variability of timbre;
ALT	Up and down bowstrokes controlled with the sustain pedal or keyswitch
Length	Sample release time
KS	Keyswitching
Vib	Vibrato control
BDF	To control the fundamental of the bass drum
AG	Aggressiveness of tone or bow stroke
At	Attack envelope speed
FD	Strength of the fundamental
TL	Tremolo level
TS	Tremolo speed
FL	Filter gain level
FF	Filter center frequency
VC	Vibrato Control for Solo Strings
Plr	Player Instrument. Note: Plr instruments are lighter versions and do not share samples with each other but must not be used with the solo instruments from which they are derived to avoid phasing problems; e.g. don't use Flute 1 Plr1*, Plr2*, or Plr3* with Flute Solo instruments.

For detailed information about the controllers, please refer to the chapter entitled "Playing Personal Orchestra Instruments", as well as the individual instrument sections in this guide.

THE WOODWIND INSTRUMENTS		
ARIA name:	**Description:**	
FLUTES:		
Alto Flute Solo	Principal Alto Flute. The Alto flute plays four notes lower than a conventional flute. Made by Mönnig	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Alto Flute Plr1*	Associate Ensemble Instrument for building ensembles, 1st player in an ensemble derived from the Principal Alto Flute Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Alto Flute Plr2*	Associate Ensemble Instrument for building ensembles, 2nd player in an ensemble derived from the Principal Alto Flute Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Alto Flute Plr3*	Associate Ensemble Instrument for building ensembles, 3rd player in an ensemble derived from the Principal Alto Flute Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Bass Flute Solo Vib	Principal Bass Flute played with vibrato. Plays one octave lower than a conventional flute	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Bass Flute Solo NV	Principal Bass Flute played without vibrato. Plays one octave lower than a conventional flute	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length, Vib
Bass Flute Plr1*	Associate Ensemble Instrument for building ensembles, 1st player in an ensemble derived from the Principal Bass Flute Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Bass Flute Plr2*	Associate Ensemble Instrument for building ensembles, 2nd player in an ensemble derived from the Principal Bass Flute Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Bass Flute Plr3*	Associate Ensemble Instrument for building ensembles, 3rd player in an ensemble derived from the Principal Bass Flute Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Flute Solo Vib	Principal Solo Flute. Played Vibrato, Made by Haynes	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Flute Solo NV	Principal Solo Flute. Played Non Vibrato	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length, Vib
Flute Solo KS	A keyswitch version of the Flute Solo instrument • C2 = Vibrato • D2 = Non-vibrato • E2 = Flutter	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Length, Vib

THE WOODWIND INSTRUMENTS		
ARIA name:	**Description:**	
FLUTES:		
Flute Solo Flutter	Principal Solo Flute. Played flutter tongue	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Flute Plr1*	Associate Ensemble Instrument for building ensembles, 1st player in an ensemble derived from the Principal Flute Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Flute Plr2*	Associate Ensemble Instrument for building ensembles, 2nd player in an ensemble derived from the Principal Flute Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Flute Plr3*	Associate Ensemble Instrument for building ensembles, 3rd player in an ensemble derived from the Principal Flute Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Piccolo Vib Solo	Principal Piccolo played with vibrato, Plays one octave higher than a conventional flute Made by Hammig	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Piccolo NV Solo	Principal Piccolo played without vibrato	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length, Vib
Piccolo Solo KS	A keyswitch version of the Piccolo Solo instrument • C3 = Vibrato • D3 = Non-vibrato • E3 = Flutter	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Length, Vib
Piccolo Flutter	Principal piccolo played flutter tongue	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
* Plr instruments do not share samples with each other but must not be used with the solo instruments from which they are derived to avoid phasing problems; e.g. don't use Flute 1 Plr1*, Plr2*, or Plr3* with Flute Solo instruments. The same applies to all Plr instruments listed below.		

THE WOODWIND INSTRUMENTS		
ARIA name:	**Description:**	
OBOES AND ENGLISH HORN:		
English Horn 1 Solo	Principal English horn. Also referred to as a cor anglais or alto oboe. Plays a fifth below an oboe and sometimes played by the third oboist.	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
English Horn 2 Solo	2nd English horn (cor anglais) with a different tone and more pronounced vibrato. Made by Loree	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
English Horn 1 Plr1	Associate Ensemble Instrument for building ensembles, 1st player in an ensemble derived from the Principal English Horn Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
English Horn 1 Plr2	Associate Ensemble Instrument for building ensembles, 2nd player in an ensemble derived from the Principal English Horn Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
English Horn 1 Plr3	Associate Ensemble Instrument for building ensembles, 3rd player in an ensemble derived from the Principal English Horn Instrument.	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Oboe 1 Modern Solo	Principal Solo Oboe	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Oboe 2 Modern Solo	2nd Solo Oboe with a little more vibrato. Made by Püchner	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Oboe 3 Modern Solo	3rd Solo Oboe with a slightly different tone and more pronounced vibrato	SusLeg, MW, Vel, Port, VAR 1, VAR 2
Oboe 1 Modern Plr1	Associate Ensemble Instrument for building ensembles, 1st player in an ensemble derived from the Principal Oboe Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Oboe 1 Modern Plr2	Associate Ensemble Instrument for building ensembles, 2nd player in an ensemble derived from the Principal Oboe Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Oboe 1 Modern Plr3	Associate Ensemble Instrument for building ensembles, 3rd player in an ensemble derived from the Principal Oboe Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Oboe Classical Solo	4th solo oboe. Older vintage instrument with a different tone quality	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Oboe D'Amore	Solo Oboe D'Amore	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length

THE WOODWIND INSTRUMENTS		
ARIA name:	**Description:**	
CLARINETS:		
Bass Clarinet Solo	Principal Bass clarinet. Plays one octave lower than a conventional clarinet. The 3rd clarinetist often will play the bass clarinet when needed	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length, Vib
Bass Clarinet Plr1	Associate Ensemble Instrument for building ensembles, 1st player in an ensemble derived from the Principal Bass Clarinet Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Bass Clarinet Plr2	Associate Ensemble Instrument for building ensembles, 2nd player in an ensemble derived from the Principal Bass Clarinet Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Bass Clarinet Plr3	Associate Ensemble Instrument for building ensembles, 3rd player in an ensemble derived from the Principal Bass Clarinet Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Bb Clarinet Solo	Principal Solo Bb Clarinet. Made by Buffet	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length, Vib
Bb Clarinet Plr1	Associate Ensemble Instrument for building ensembles, 1st player in an ensemble derived from the Principal Bb Clarinet Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Bb Clarinet Plr2	Associate Ensemble Instrument for building ensembles, 2nd player in an ensemble derived from the Principal Bb Clarinet Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Bb Clarinet Plr3	Associate Ensemble Instrument for building ensembles, 3rd player in an ensemble derived from the Principal Bb Clarinet Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Contrabass Clarinet Solo	Principal Contrabass Clarinet. Plays an octave lower than the bass clarinet	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Eb Clarinet Solo	Principal Eb Solo Clarinet. Plays four notes higher than the Bb Clarinet.	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length, Vib

THE WOODWIND INSTRUMENTS		
ARIA name:	**Description:**	
BASSOONS:		
Bassoon 1 Solo	Principal Solo Bassoon. Made by Heckel	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length, Vib
Bassoon 2 Solo	2nd Bassoon. A different bassoon with a different tone	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length, Vib
Bassoon 1 Plr1	Associate Ensemble Instrument for building ensembles, 1st player in an ensemble derived from the Principal Bassoon Instrument.	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Bassoon 1 Plr2	Associate Ensemble Instrument for building ensembles, 2nd player in an ensemble derived from the Principal Bassoon Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Bassoon 1 Plr3	Associate Ensemble Instrument for building ensembles, 3rd player in an ensemble derived from the Principal Bassoon Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Bassoon 2 Plr1	Associate Ensemble Instrument for building ensembles, 1st player in an ensemble derived from the 2nd Bassoon Instrument.	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Bassoon 2 Plr2	Associate Ensemble Instrument for building ensembles, 2nd player in an ensemble derived from the 2nd Bassoon Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Bassoon 2 Plr3	Associate Ensemble Instrument for building ensembles, 3rd player in an ensemble derived from the 2nd Bassoon Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Contrabassoon 1 Solo	Principal Contrabassoon. Plays one octave lower than a conventional bassoon and lower than any instrument in the orchestra	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length, Vib
Contrabassoon 2 Solo	2ns Contrabassoon. Has a wider note range and a different tone quality. Made by Schreiber	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length, Vib

THE BRASS INSTRUMENTS		
ARIA name:	**Description:**	
FRENCH HORNS:		
French horn 1 Solo	Principal Solo French Horn	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length, Vib
French horn 1 Solo KS	A keyswitch version of the French Horn 1 Solo instrument • C0 = Open • D0 = Mutes	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Length, Vib
French horn 1 Solo AG	The same as French Horn 1 Solo but with a more aggressive sound	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length, Vib, AG
French horn 1 Plr1*	Associate Ensemble Instrument for building ensembles, 1st player in an ensemble derived from the Principal French Horn Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
French horn 1 Plr1 KS*	A keyswitch version of French horn 1 Plr1 • C0 = Open • D0 = Mutes	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Length
French horn 1 Plr2*	Associate Ensemble Instrument for building ensembles, 2nd player in an ensemble derived from the Principal French Horn Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
French horn 1 Plr2 KS*	A keyswitch version of French horn 1 Plr2 • C0 = Open • D0 = Mutes	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Length
French horn 1 Plr3*	Associate Ensemble Instrument for building ensembles, 3rd player in an ensemble derived from the Principal French Horn Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
French horn 1 Plr3 KS*	A keyswitch version of French horn 1 Plr3 • C0 = Open • D0 = Mutes	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Length
French horn 2 Solo	2nd French Horn. A different French horn with a different tone quality	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length, Vib
French horn 2 Solo AG	The same as French Horn 2 Solo but programmed for a more aggressive sound	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length, Vib, AG
French horn 2 Plr1*	Associate Ensemble Instrument for building ensembles, 1st player in an ensemble derived from the 2nd French Horn Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length

THE BRASS INSTRUMENTS		
ARIA name:	**Description:**	
FRENCH HORNS:		
French horn 2 Plr2*	Associate Ensemble Instrument for building ensembles, 2nd player in an ensemble derived from the 2nd French Horn Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
French horn 2 Plr3*	Associate Ensemble Instrument for building ensembles, 3rd player in an ensemble derived from the 2nd French Horn Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
French Horn Solo Mute	Principal French Horn played with a Straight Mute (Sordino)	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length, Vib
French Horn Plr1* Mute	Associate Ensemble Instrument for building ensembles, 1st player in an ensemble derived from the French Horn Muted Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
French Horn Plr2* Mute	Associate Ensemble Instrument for building ensembles, 2nd player in an ensemble derived from the French Horn Muted Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
French Horn Plr3* Mute	Associate Ensemble Instrument for building ensembles, 3rd player in an ensemble derived from the French Horn Muted Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
French Horn Overlay f	A different Solo French Horn played forte and intended to be layered with other horns to create a fuller section sound	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
French Horn Overlay f AG	The same as French Horn f Overlay but programmed for a more aggressive sound	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length, AG
French Horn ff Overlay	A different Solo French Horn played fortissimo and intended to be layered with other horns to create a brassier section sound	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
SAM French Horn Plr 1 KS	Associate Ensemble Instrument for building ensembles, 1st player in an ensemble derived from the SAM French Horn Solo KS instrument • C0 = Open • D0 = Mutes	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Length, Vib
SAM French Horn Plr 2 KS	Associate Ensemble Instrument for building ensembles, 2nd player in an ensemble derived from the SAM French Horn Solo KS instrument • C0 = Open • D0 = Mutes	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Length, Vib

THE BRASS INSTRUMENTS		
ARIA name:	**Description:**	
FRENCH HORNS:		
SAM French Horn Plr 3 KS	Associate Ensemble Instrument for building ensembles, 3rd player in an ensemble derived from the SAM French Horn Solo KS instrument • C0 = Open • D0 = Mutes	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Length, Vib
SAM French Horn Section KS	Keyswitched French Horn Section (4 horns) • C-1 = Open • D-1 = Mutes	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Length
SAM French Horn Solo KS	Keyswitched SAM solo French Horn • C0 = Open • D0 = Mutes	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Length, Vib
* Plr instruments do not share samples with each other but must not be used with the solo instruments from which they are derived to avoid phasing problems; e.g. don't use French horn 1 Plr1*, Plr2*, or Plr3* with French horn 1 (solo). The same applies to all Plr instruments listed below.		

THE BRASS INSTRUMENTS		
ARIA name:	**Description:**	
TRUMPETS:		
Trumpet 1 Solo	Principal Solo C Trumpet	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length, Vib
Trumpet 1 Solo KS	A keyswitch version of the Trumpet 1 Solo instrument • C2 = Open • D2 = Mutes	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Length, Vib
Trumpet 1 Solo AG	The same as Trumpet 1 Solo but programmed for a more aggressive sound	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length, Vib, AG
Trumpet 1 Plr1	Associate Ensemble Instrument for building ensembles, 1st player in an ensemble derived from the Principal Trumpet Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Trumpet 1 Plr1 KS	A keyswitch version of Trumpet 1 Plr1 • C2 = Open • D2 = Mutes	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Length
Trumpet 1 Plr2	Associate Ensemble Instrument for building ensembles, 2nd player in an ensemble derived from the Principal Trumpet Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Trumpet 1 Plr2 KS	A keyswitch version of Trumpet 1 Plr2 • C2 = Open • D2 = Mutes	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Length
Trumpet 1 Plr3	Associate Ensemble Instrument for building ensembles, 3rd player in an ensemble derived from the Principal Trumpet Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Trumpet 1 Plr3 KS	A keyswitch version of Trumpet 1 Player 3 • C2 = Open • D2 = Mutes	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Length
Trumpet 2 Solo	2nd Solo Trumpet. A different trumpet with a brighter sound than Trumpet 1	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length, Vib
Trumpet 2 Plr1	Associate Ensemble Instrument for building ensembles, 1st player in an ensemble derived from the 2nd Trumpet Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Trumpet 2 Plr2	Associate Ensemble Instrument for building ensembles, 2nd player in an ensemble derived from the 2nd Trumpet Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length

THE BRASS INSTRUMENTS		
ARIA name:	**Description:**	
TRUMPETS:		
Trumpet 2 Plr3	Associate Ensemble Instrument for building ensembles, 3rd player in an ensemble derived from the 2nd Trumpet Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Trumpet Piccolo NV Solo	Piccolo Trumpet played with no vibrato. Made by Bach Stradivarius	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length, Vib
Trumpet Piccolo V Solo	Piccolo Trumpet played with vibrato	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Trumpet Solo Straight Mute	Principal Trumpet played with a Straight Mute (Sordino)	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length, Vib
Trumpet Plr1 Straight Mute	Associate Ensemble Instrument for building ensembles, 1st player in an ensemble derived from the Muted Trumpet Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Trumpet Plr2 Straight Mute	Associate Ensemble Instrument for building ensembles, 2nd player in an ensemble derived from the Muted Trumpet Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Trumpet Plr3 Straight Mute	Associate Ensemble Instrument for building ensembles, 3rd player in an ensemble derived from the Muted Trumpet Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Trumpet Overlay	A different Solo Trumpet played forte and intended to be layered with other trumpets to create a fuller section sound.	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Trumpet Overlay AG	The same as Trumpet Overlay but programmed for a more aggressive sound	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length, AG
SAM Trumpet Plr 1 KS	Associate Ensemble Instrument for building ensembles, 1st player in an ensemble derived from the SAM Trumpet Solo KS instrument • C2 = Open • D2 = Mutes	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Length, Vib
SAM Trumpet Plr 2 KS	Associate Ensemble Instrument for building ensembles, 2nd player in an ensemble derived from the SAM Trumpet Solo KS instrument • C2 = Open • D2 = Mutes	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Length, Vib

THE BRASS INSTRUMENTS		
ARIA name:	**Description:**	
TRUMPETS:		
SAM Trumpet Plr 3 KS	Associate Ensemble Instrument for building ensembles, 3rd player in an ensemble derived from the SAM Trumpet Solo KS instrument • C2 = Open • D2 = Mutes	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Length, Vib
SAM Trumpet Section KS	Keyswitched Bb Trumpet Section (3) • C2 = Open • D2 = Mutes	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Length
SAM Trumpet Solo KS	Keyswitched SAM solo Bb trumpet • C2 = Open • D2 = Mutes	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Length, Vib
SAM Picc Trumpet Solo KS	Keyswitched SAM solo piccolo trumpet • C2 = Open • D2 = Mutes	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Length, Vib

THE BRASS INSTRUMENTS		
ARIA name:	**Description:**	
TROMBONES:		
Bass Trombone 1 Solo	Principal Bass Trombone. Plays one octave lower than a conventional trombone. Made by Bach	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length, Vib
Bass Trombone 2 Solo	2nd Bass Trombone. A different bass trombone with a brighter tone	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length, Vib
Bass Trombone 2 Solo AG	Same as Bass Trombone 2 Solo, but programmed for a more aggressive sound	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length, Vib, AG
Trombone Solo	Principal Solo Tenor Trombone, Made vy Conn	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length, Vib
Trombone Solo KS	A keyswitch version of the Trombone Solo instrument • C1 = Open • D1 = Mutes	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Length, Vib
Trombone Solo AG	The same as the Trombone Solo but programmed for a more aggressive sound	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length, Vib, AG
Trombone Plr1	Associate Ensemble Instrument for building ensembles, 1st player in an ensemble derived from the Principal Trombone Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Trombone Plr1 KS	A keyswitch version of Trombone Plr1 • C1 = Open • D1 = Mutes	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Length
Trombone Plr2	Associate Ensemble Instrument for building ensembles, 2nd player in an ensemble derived from the Principal Trombone Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Trombone Plr2 KS	A keyswitch version of Trombone Plr2 • C1 = Open • D1 = Mutes	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Length
Trombone Plr3	Associate Ensemble Instrument for building ensembles, 3rd player in an ensemble derived from the Principal Trombone Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Trombone Plr3 KS	A keyswitch version of Trombone Plr3 • C1 = Open • D1 = Mutes	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Length
Trombone Solo Mute	Principal Tenor Trombone played with a Straight Mute (Sordino)	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length

THE BRASS INSTRUMENTS		
ARIA name:	**Description:**	
TROMBONES:		
Trombone Mute Plr1	Associate Ensemble Instrument for building ensembles, 1st player in an ensemble derived from the Tenor Trombone Muted Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Trombone Mute Plr2	Associate Ensemble Instrument for building ensembles, 2nd player in an ensemble derived from the Tenor Trombone Muted Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Trombone Mute Plr3	Associate Ensemble Instrument for building ensembles, 3rd player in an ensemble derived from the Tenor Trombone Muted Instrument	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Trombone Overlay	A different Solo Trombone played forte and intended to be layered with other trombones to create a fuller section sound	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Trombone Overlay AG	The same as Trombone Overlay but programmed for a more aggressive sound	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length, AG
SAM Trombone Plr 1 KS	Associate Ensemble Instrument for building ensembles, 1st player in an ensemble derived from the SAM Trombone KS instrument • C1 = Open • D1 = Mutes	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Length, Vib
SAM Trombone Plr 2 KS	Associate Ensemble Instrument for building ensembles, 2nd player in an ensemble derived from the SAM Trombone KS instrument • C1 = Open • D1 = Mutes	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Length, Vib
SAM Trombone Plr 3 KS	Associate Ensemble Instrument for building ensembles, 3rd player in an ensemble derived from the SAM Trombone KS instrument • C1 = Open • D1 = Mutes	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Length, Vib
SAM Tbone Section KS	Keyswitched Trombone Section (3) • C0 = Open • D0 = Mutes	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Length
SAM Trombone Solo KS	Keyswitched SAM solo trombone • C1 = Open • D1 = Mutes	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Length, Vib
SAM Bass Trombone Solo KS	Keyswitched SAM solo bass trombone • C0 = Open • D0 = Mutes	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Length, Vib

THE BRASS INSTRUMENTS		
ARIA name:	**Description:**	
TUBAS:		
Contratuba Solo	Principal Contratuba. Plays lower than a conventional tuba. Specially made by Melton	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length, Vib
Tuba 2 Solo	2nd Solo Bass Tuba with a different tone	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length, Vib
Tuba 2 Solo AG	The same as Tuba 2 Solo but programmed for a more aggressive sound	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length, Vib, AG
Tuba Overlay	A different Solo Tuba played forte and intended to be layered or played solo for a fuller sound	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Tuba Overlay AG	The same as Tuba Overlay but programmed for a more aggressive sound	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length, AG
SAM Tuba Solo KS	Keyswitched SAM solo tuba • C-1 = Open • D-1 = Mutes	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Length, Vib

THE PERCUSSION INSTRUMENTS			
ARIA name:	**Description:**		
PERCUSSION:			
Basic Orchestral Percussion	C1 - bass drum hit C#1 - bass drum roll (mod wheel) D1 thru G2 - timpani hit left hand G#2 - side drum hit left hand A2 - side drum hit right hand A#2 - side drum roll (mod wheel) B2 - snare drum hit left hand C3 - snare drum hit right hand C#3 - snare drum roll (mod wheel) D3 thru G4 - timpani hit right hand G#4 - large gong A4 - medium gong 1 A#4 - tam tam B4 - medium gong 2	C5 - piatti cymbal 1 C#5 -piatti cymbal 2 D5 - piatti cymbal 3 D#5 - crash cymbal E5 - choke cymbal F5 - cymbal hit (ping) left hand F#5 - cymbal hit (ping) right hand G5 - cymbal hit (ping) choke G#5 - cymbal roll (mod wheel) A5 - cymbal roll (mod wheel) with release hit A#5 - cymbal roll crescendo B5 – triangle long C6 – triangle short	Vel (vol), BDF, BD AG VAR 1, VAR 2
Bass Drum	The bass drum is the largest drum in the orchestra. C1 is a bass drum hit. C#1 is a bass drum roll controlled by the mod wheel (cc#1.) The Bass Drum has a tunable fundamental (controllable by CC# 20). Made by Ludwig.		BDF, Vel (vol), VAR 1, VAR 2, AG
Crotales KS	Crotales resemble small cymbals and produce a definite pitch		Vel (vol), KS, VAR 1, VAR 2
	Playable rolls keyswitch: • C2 = Standard single hits • D2 = Playable release trigger rolls		
Cymbals (includes Gong & Tam-Tam)	Cymbals are large thin metal discs that are played by being struck together:		Vel (vol), VAR 1, VAR 2
	G#4 - large gong A4 - medium gong 1 A#4 - tam tam B4 - medium gong 2 C5 - piatti cymbal 1 C#5 -piatti cymbal 2 D5 - piatti cymbal 3 D#5 - crash cymbal	E5 - choke cymbal F5 - cymbal hit (ping) left hand F#5 - cymbal hit (ping) right hand G5 - cymbal hit (ping) choke G#5 - cymbal roll (mod wheel) A5 - cymbal roll (mod wheel) with release hit A#5 - cymbal roll crescendo	
Glockenspiel KS	The Glockenspiel is another name for orchestral bells and consists of tuned metal bars that are struck with a hard beater		Vel (vol), KS, VAR 1, VAR 2
	Playable rolls keyswitch: • C4 = Standard single hits • D4 = Playable release trigger rolls		

THE PERCUSSION INSTRUMENTS		
ARIA name:	**Description:**	
PERCUSSION:		
Grand Symphonic Marimba KS & Marimba KS	The Orchestral Marimba has two rows of wooden bars that are played with beaters (mallets)	Vel (vol), SusDp, KS, VAR 1, VAR 2
	Playable rolls keyswitch: • C0 = Standard single hits • D0 = Playable release trigger rolls	
Handbells KS	Handbells are sets of brass bells, each tuned to a particular note of the scale	Vel (vol), KS, VAR 1, VAR 2
	Playable rolls keyswitch: • C2 = Standard single hits • D2 = Playable release trigger rolls	
Percussion Toys KS	Assorted percussion instruments family commonly known as "toys"	Vel (vol), KS, VAR 1, VAR 2
	A#2 - cowbell 1 B2 - cowbell 2 C3 - cowbell 3 C#3 - gourd 1 D3 - gourd 2 D#3 - shaker 1 E3 - shaker 2 C4 - tambourine pop C#4 - tambourine shake	E4 - clave 1 F4 - clave 2 F#4 - ratchet G4 - sleigh bells G#4 - marktree A4 - triangle short - sustain pedal down for damped A#4 - triangle long - sustain pedal down for damped
	Playable rolls keyswitch: • C2 = Standard single hits • D2 = Playable release trigger rolls	
Snares KS	Orchestral snare drum with & without snares engaged, including snare rolls • G#2 - side drum hit played with the left hand • A2 - side drum hit played with the right hand • A#2 - side drum roll (mod wheel) • B2 - snare drum hit played with the left hand • C3 - snare drum hit played with the right hand • C#3 - snare drum roll (mod wheel)	Vel (vol), KS, VAR 1, VAR 2
	Playable rolls keyswitch: • C2 = Standard single hits • D2 = Playable release trigger rolls	

THE PERCUSSION INSTRUMENTS		
ARIA name:	**Description:**	
PERCUSSION:		
Timpani KS	Also known as the "Kettledrums" being shaped like huge copper kettles and are easily noticeable onstage • D1 thru G2 - timpani hits played with the left hand • D3 thru G4 - timpani hits played with the right hand	Vel (vol), KS, VAR 1, VAR 2
	Playable rolls keyswitch (playable with right hand hits only): • C0 = Standard single hits • D0 = Playable release trigger rolls	
Tubular Bells KS	Tubular Bells are also known as Orchestral Chimes and consist of a series of lightweight metal tubes of varying length that are hung vertically in a frame and struck with a mallet	Vel (vol), SusDp, KS, VAR 1, VAR 2
	Playable rolls keyswitch: • C2 = Standard single hits • D2 = Playable release trigger rolls	
Vibraphone KS	The Vibraphone has two rows of metal bars with electric resonators that produce a distinctive vibrato or throbbing effect. The sustain pedal activates sustain but uses pedal mode 2.	Vel (vol) Sus, KS, Length, At, TL, TS
	Playable rolls keyswitch: • C1 = Standard single hits • D1 = Playable release trigger rolls	
Vibraphone (std pedal)	The Vibraphone has two rows of metal bars with electric resonators that produce a distinctive vibrato or throbbing effect. Uses Standard sustain pedal. Does not include KS playable rolls.	Vel (vol), Sus, Length, At, TL, TS
Wind Machine	A wind machine is an effects instrument that emulates the sound of wind.	MW (vol)
Xylophone KS	The Xylophone has two rows of graduated wooden bars, mounted in a frame, that are played with beaters (mallets)	Vel (vol), SusDp, KS
	Playable rolls keyswitch: • C3 = Standard single hits • D3 = Playable release trigger rolls	

THE HARP INSTRUMENTS		
ARIA name:	**Description:**	
HARPS:		
Chromatic Harp 1	Venus Harp with a mellow sound.	Vel (vol), SusDp
Chromatic Harp 1 Lite	A lite version of the Chromatic Harp 1 instrument.	Vel (vol), SusDp
Chromatic Harp 2	Wurlitzer Harp with a clearer sound.	Vel (vol), SusDp
Chromatic Harp 2 Lite	A lite version of the Chromatic Harp 2 instrument.	Vel (vol), SusDp
Glissando Harp 1	Maps Harp 1 samples to the white notes of the keyboard. Simulate harp glissandos in real time by running your finger up and down the white notes.	MIDI maps are used to emulate the pedals.
Glissando Harp 2	Maps Harp 2 samples to the white notes of the keyboard. Same as above but uses the Wurlitzer harp samples.	MIDI maps are used to emulate the pedals.
Harp 1 KS	A keyswitch instrument containing all the Harp 1 instruments: • C-1 = Chromatic Harp • D-1 = Glissando Harp • E-1 = Harp Harmonics	Vel (vol), SusDp
Harp 2 KS	A keyswitch instrument containing all the Harp 2 instruments: • C-1 = Chromatic Harp • D-1 = Glissando Harp • E-1 = Harp Harmonics	Vel (vol), SusDp
Harp Harmonics 1	Venus Harp playing harmonics	SusDp
Harp Harmonics 2	Wurlitzer Harp playing harmonics	SusDp

THE KEYBOARD INSTRUMENTS		
ARIA name:	**Description:**	
KEYBOARDS:		
Celesta	The celesta is a keyboard percussion instrument which produces very soft, crystalline bell-like tones. Made by Mustel	Vel (vol), SusDp, Sus (sus)
Glass Armonica	Emulation of a glass armonica	Vel (vol)
Harpsichord KS	The harpsichord is a double manual French harpsichord made by Hubbard. The stops are selected by keyswitches as follows: • C0 – 8' Stop, Brighter Sound • D0 – 8 '& 4' Stop. Mellow Sound • E0 – Buff Stop, Muted Sound	Keyswitch, Vel (vol), Sus (sus)
Steinway Piano	Steinway Concert Grand Piano, Chromatic with 2 dynamics	Vel (vol), Sus (sus)
Steinway Piano Lite	Steinway Concert Grand Piano, 2 dynamics – fewer samples	Vel (vol), Sus (sus)
Steinway Piano Duo 1 & Duo2	The Keyboard is mapped so two keyboards do not have samples in common. They can be used in piano duos	Vel (vol), Sus (sus)

THE PIPE ORGAN		
ARIA name:	**Description:**	
CONCERT PIPE ORGAN:		
Baroque Plenum	The pipe organ is a German Baroque organ built by Rudolf von Beckerath. This is the Baroque Plenum Stop. for the Pipe Organ:	MW (vol), FD, FL, FF
Baroque Plen Reed Pedal	The Baroque Pleumn Reed stop for the pedals.	MW (vol), FD, FL, FF
Baroque Plen Reeds	Baroque Plenum Reed Stop.	MW (vol), FD, FL, FF
Baroque Plenum Pedal	Baroque Plenum stop for the pedals.	MW (vol), FD, FL, FF
Brustwerk All stops	Bruchwerk stop (all stops).	MW (vol), FD, FL, FF
Cornet	Cornet stop.	MW (vol), FD, FL, FF
Flutes	Flutes stop.	MW (vol), FD, FL, FF
Full Organ	Full Organ stops.	MW (vol), FD, FL, FF
Haupt Mix	Hauptwek, Mix of stops.	MW (vol), FD, FL, FF
Hauptwerk All Stops	Hauptwerk All Stops	MW (vol), FD, FL, FF
Prinzipal	Prinzipal stop.	MW (vol), FD, FL, FF
Scharf IV	Scharf IV stop	MW (vol), FD, FL, FF
Symphonic Plenum	Symphonic Plenum stop.	MW (vol), FD, FL, FF

THE SOLO STRINGS INSTRUMENTS		
ARIA name:	**Description:**	
SOLO VIOLIN:		
Violin 1 Solo	Gagliano Solo Violin, Principal Violin. Combines characteristics of both long and short bows	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Violin 1 KS Solo	A keyswitch version of the Violin Gagliano Solo instrument • C1 = Sustain • C#1 = Sustain mute • D1 = Automatically alternating up and downbows • D#1 = Upbows • E1 = Downbows • F1 = Pizzicato • F#1 = Playable tremolo mute • G1 = Playable tremolo G#1 = Playable muted trills (extended intervals can be chosen with cc16) • A1 = Playable trills (extended intervals can be chosen with cc16) • A#1 = Playable whole step muted trills • B1 = Playable whole step trills	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Alt, Length
Violin 1 Plr1*	1st player in an ensemble derived from the Principal Violin	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Violin 1 Plr2*	2nd player in an ensemble derived from the Principal Violin	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Violin 1 Plr3*	3rd player in an ensemble derived from the Principal Violin	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Violin 1 Pizz Solo	Solo Gagliano Violin played pizzicato. Velocity controls volume level and timbre changes (brighter at higher velocities)	Vel (vol), VAR 1, VAR 2, Length
Violin 2 Solo	Stradivari Solo Violin, Concertmaster, Combines characteristics of both long and short bows.	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length

THE SOLO STRINGS INSTRUMENTS		
ARIA name:	**Description:**	
SOLO VIOLIN:		
Violin 2 Solo KS	A keyswitch version of the Violin 2 Solo instrument • C1 = Sustain • C#1 = Sustain mute • D1 = Automatically alternating up and downbows • D#1 = Upbows • E1 = Downbows • F1 = Pizzicato • F#1 = Playable tremolo mute • G1 = Playable tremolo • G#1 = Playable muted trills (extended intervals can be chosen with cc16) • A1 = Playable trills (extended intervals can be chosen with cc16) • A#1 = Playable whole step muted trills • B1 = Playable whole step trills	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Alt, Length
Violin 2 Plr1*	1st player in an ensemble derived from the Concertmaster Violin	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Violin 2 Plr2*	2nd player in an ensemble derived from the Concertmaster Violin	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Violin 2 Plr3*	3rd player in an ensemble derived from the Concertmaster Violin	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Violin 2 Pizz Solo	Solo Stradivari played pizzicato. Velocity controls volume level and timbre changes (brighter at higher velocities)	Vel (vol), VAR 1, VAR 2, Length
Violin 3 Solo	Guarneri Solo Violin, Associate Principal. Combines characteristics of both long and short bows	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length

THE SOLO STRINGS INSTRUMENTS		
ARIA name:	**Description:**	
SOLO VIOLIN:		
Violin 3 Solo KS	A keyswitch version of the Violin 3 Solo instrument • C1 = Sustain • C#1 = Sustain mute • D1 = Automatically alternating up and downbows • D#1 = Upbows • E1 = Downbows • F1 = Pizzicato • F#1 = Playable tremolo mute • G1 = Playable tremolo • G#1 = Playable muted trills (extended intervals can be chosen with cc16) • A1 = Playable trills (extended intervals can be chosen with cc16) • A#1 = Playable whole step muted trills • B1 = Playable whole step trills	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Alt, Length
Violin 3 Plr1*	1st player in an ensemble derived from the Associate Principal Violin	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Violin 3 Plr2*	2nd player in an ensemble derived from the Associate Principal Violin	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Violin 3 Plr3*	3rd player in an ensemble derived from the Associate Principal Violin	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Violin 3 Pizz Solo	Solo Guarneri Violin played pizzicato. Velocity controls volume level and timbre changes (brighter at higher velocities)	Vel (vol), VAR 1, VAR 2, Length
* Plr instruments do not share samples with each other but must not be used with the solo instruments from which they are derived to avoid phasing problems; e.g. don't use Violin 2 Plr1*, Plr2*, or Plr3* with Violin 2 Solo instruments. The same applies to al Plr instruments listed below.		

THE SOLO STRINGS INSTRUMENTS		
ARIA name:	**Description:**	
SOLO VIOLA:		
Viola Solo	18th Century Solo Viola, Principal Viola. Combines characteristics of both long and short bows.	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Viola Solo KS	A keyswitch version of the Viola Solo instrument • C1 = Sustain • C#1 = Sustain mute • D1 = Automatically alternating up and downbows • D#1 = Upbows • E1 = Downbows • F1 = Pizzicato • F#1 = Playable tremolo mute • G1 = Playable tremolo • G#1 = Playable muted trills (extended intervals can be chosen with cc16) • A1 = Playable trills (extended intervals can be chosen with cc16) • A#1 = Playable whole step muted trills • B1 = Playable whole step trills	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Alt, Length
Viola Plr1	1st player in an ensemble derived from the Principal Viola	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Viola Plr2	2nd player in an ensemble derived from the Principal Viola	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Viola Plr3	3rd player in an ensemble derived from the Principal Viola	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Viola Pizz Solo	Solo Viola played pizzicato. Velocity controls volume level and timbre changes (brighter at higher velocities)	Vel (vol), VAR 1, VAR 2, Length

THE SOLO STRINGS INSTRUMENTS		
ARIA name:	**Description:**	
SOLO CELLO:		
Cello 1 Solo	Vuillaume Solo Cello, Principal Cello. Combines characteristics of both long and short bows.	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Cello 1 Solo KS	A keyswitch version of the Cello 1 Solo instrument • C0 = Sustain • C#0 = Sustain mute • D0 = Automatically alternating up and downbows • D#0 = Upbows • E0 = Downbows • F0 = Pizzicato • F#0 = Playable tremolo mute • G0 = Playable tremolo • G#0 = Playable muted trills (extended intervals can be chosen with cc16) • A0 = Playable trills (extended intervals can be chosen with cc16) • A#0 = Playable whole step muted trills • B0 = Playable whole step trills	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Alt, Length
Cello 1 Plr1	1st player in an ensemble derived from the Principal Cello	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Cello 1 Plr2	2nd player in an ensemble derived from the Principal Cello	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Cello 1 Plr3	3rd player in an ensemble derived from the Principal Cello	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Cello 2 Solo	Montagnana Solo Cello, Assistant Principal. Combines characteristics of both long and short bows	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length

THE SOLO STRINGS INSTRUMENTS		
ARIA name:	**Description:**	
SOLO CELLO:		
Cello 2 Solo KS	A keyswitch version of the Cello 2 Solo instrument • C0 = Sustain • C#0 = Sustain mute • D0 = Automatically alternating up and downbows • D#0 = Upbows • E0 = Downbows • F0 = Pizzicato • F#0 = Playable tremolo mute • G0 = Playable tremolo • G#0 = Playable muted trills (extended intervals selectable w/ cc16) • A0 = Playable trills (extended intervals selectable with cc16) • A#0 = Playable whole step muted trills • B0 = Playable whole step trills	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Alt, Length
Cello 2 Plr1	1st player in an ensemble derived from the Assistant Principal Cello	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Cello 2 Plr2	2nd player in an ensemble derived from the Assistant Principal Cello	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Cello 2 Plr3	3rd player in an ensemble derived from the Assistant Principal Cello	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Cello 3 Solo	Gofriller Solo Cello, Associate Principal. Combines characteristics of both long and short bows	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length

THE SOLO STRINGS INSTRUMENTS		
ARIA name:	**Description:**	
SOLO CELLO:		
Cello 3 Solo KS	A keyswitch version of the Cello 3 Solo instrument • C0 = Sustain • C#0 = Sustain mute • D0 = Automatically alternating up and downbows • D#0 = Upbows • E0 = Downbows • F0 = Pizzicato • F#0 = Playable tremolo mute • G0 = Playable tremolo • G#0 = Playable muted trills (extended intervals selectable with cc16) • A0 = Playable trills (extended intervals selectable with cc16) • A#0 = Playable whole step muted trills • B0 = Playable whole step trills	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Alt, Length
Cello 3 Plr1	1st player in an ensemble derived from the Assistant Principal Cello	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Cello 3 Plr2	2nd player in an ensemble derived from the Assistant Principal Cello	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Cello 3 Plr3	3rd player in an ensemble derived from the Assistant Principal Cello	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Cello Pizz Solo	Solo Cello played pizzicato. Velocity controls volume level and timbre changes (brighter at higher velocities)	Vel (vol), VAR 1, VAR 2, Length

THE SOLO STRINGS INSTRUMENTS		
ARIA name:	**Description:**	
SOLO DOUBLE BASS:		
Double Bass Solo	18th Century Solo Double Bass. Principal. Combines characteristics of both long and short bows	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Double Bass Solo KS	A keyswitch version of the Double Bass Solo instrument • C-1 = Sustain • C#-1 = Sustain mute • D-1 = Automatically alternating up and downbows • D#-1 = Upbows • E-1 = Downbows • F-1 = Pizzicato • F#-1 = Playable tremolo mute • G-1 = Playable tremolo • G#-1 = Playable muted trills (extended intervals selectable with cc16) • A-1 = Playable trills (extended intervals selectable with cc16) • A#-1 = Playable whole step muted trills • B-1 = Playable whole step trills	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Alt, Length
Double Bass Plr1*	1st player in an ensemble derived from the Principal Double Bass	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Double Bass Plr2*	2nd player in an ensemble derived from the Principal Double Bass	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Double Bass Plr3*	3rd player in an ensemble derived from the Principal Double Bass	SusLeg, MW, Vel, Port, VAR 1, VAR 2, Length
Double Bass Pizz Solo	Solo Double Bass played pizzicato. Velocity controls volume level and timbre changes (brighter at higher velocities)	Vel (vol), VAR 1, VAR 2, Length

THE STRING SECTION INSTRUMENTS		
ARIA name:	**Description:**	
1st VIOLIN SECTION:		
Violins 1 Lush	A lush sustain with strong vibrato played by a twelve-player 1st violin section	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2
Violins 1 Lush Mutes	Same as above played Sordino (with the mutes)	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2
Violins 1 Pizzicato	1st Violin section played pizzicato. Velocity controls volume level and timbre changes (brighter at higher velocities)	Vel (vol), VAR 1, VAR 2
Violins 1 Short Bows KS	1st Violin section played short bow style Keyswitch for bow direction control: • D1 = automatically alternating bow strokes • D#1 = bow stroke 1 • E1 = bow stroke 2	Vel (vol), KS, Length, VAR 1, VAR 2
Violins 1 Short Bows KS AG	Violins 1 Short Bows with more aggressive sound, controlled by velocity. Keyswitch for bow direction control: • D1 = automatically alternating bow strokes • D#1 = bow stroke 1 • E1 = bow stroke 2	Vel (vol), KS, Length, VAR 1, VAR 2, AG
Violins 1 Sus+Short	1st Violin section strings that combine characteristics of both long and short bows into single instruments.	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2
Violins 1 Sus+Short AG	Violins 1 Sustain + Short with more aggressive sound, controlled by the mod wheel controller or CC#1	SusLeg, MW, Vel, Port, AG
Violins 1 Sus+Short Mutes	Same as above played Sordino (with the mutes)	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2
Violins 1 Tremolo	1st Violin section played tremolo	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2
Violins 1 Trills Half	1st Violin section played half-step trills	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2
Violins 1 Trills Whole	1st Violin section played whole-step trills	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2

THE STRING SECTION INSTRUMENTS		
ARIA name:	**Description:**	
1st VIOLIN SECTION:		
Violins 1 KS	A keyswitch instrument containing all 1st Violins instruments • C1 = Sus+short (legato with sustain pedal) • C#1 = Sus+short mutes (legato with sustain pedal) • D1 = Automatically alternating up and downbows • D#1 = Upbows • E1 = Downbows • F1 = Pizzicato • F#1 = Tremolo mutes (legato with sustain pedal) • G1 = Tremolo (legato with sustain pedal) • G#1 = Half step trills mutes (legato with sustain pedal) • A1 = Half step trills (legato with sustain pedal) • A#1 = Whole step trills mutes (legato with sustain pedal) • B1 = Whole step trills (legato with sustain pedal)	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Alt, Length

THE STRING SECTION INSTRUMENTS		
ARIA name:	**Description:**	
2nd VIOLIN SECTION:		
Violins 2 Lush	A lush sustain with strong vibrato played by a ten-player 2nd violin section	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2
Violins 2 Lush Mutes	Same as above played Sordino (with the mutes)	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2
Violins 2 Pizzicato	2nd Violin section played pizzicato. Velocity controls volume level and timbre changes (brighter at higher velocities)	Vel (vol), VAR 1, VAR 2, Length
Violins 2 Short Bows KS	2nd Violin section played short bow style Keyswitch for bow direction control: • D1 = automatically alternating bow strokes • D#1 = bow stroke 1 • E1 = bow stroke 2	Vel (vol), KS, Length, VAR 1, VAR 2
Violins 2 Short Bows KS AG	Violins 1 Short Bows with more aggressive sound, controlled by velocity. Keyswitch for bow direction control: • D1 = automatically alternating bow strokes • D#1 = bow stroke 1 • E1 = bow stroke 2	Vel (vol), KS, Length, VAR 1, VAR 2, AG
Violins 2 Sustain+Short	2nd Violin section strings that combine characteristics of both long and short bows into single instruments	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2
Violins 2 Sus+Short AG	Violins 2 Sustain + Short with more aggressive sound, controlled by the mod wheel controller or CC#1	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2, AG
Violins 2 Sus+Short Mutes	Same as above played Sordino (with the mutes)	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2
Violins 2 Tremolo	2nd Violin section played tremolo	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2
Violins 2 Trills Half	2nd Violin section played half-step trills	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2

THE STRING SECTION INSTRUMENTS		
ARIA name:	**Description:**	
2nd VIOLIN SECTION:		
Violins 2 Trills Whole	2nd Violin sectionn played whole-step trills	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2
Violins 2 KS	A keyswitch instrument containing all 2nd Violins instruments • C1 = Sus+short (legato with sustain pedal) • C#1 = Sus+short mutes (legato with sustain pedal) • D1 = Automatically alternating up and downbows • D#1 = Upbows • E1 = Downbows • F1 = Pizzicato • F#1 = Tremolo mutes (legato with sustain pedal) • G1 = Tremolo (legato with sustain pedal) • G#1 = Half step trills mutes (legato with sustain pedal) • A1 = Half step trills (legato with sustain pedal) • A#1 = Whole step trills mutes (legato with sustain pedal) • B1 = Whole step trills (legato with sustain pedal)	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Alt, Length

THE STRING SECTION INSTRUMENTS		
ARIA name:	**Description:**	
VIOLA SECTION:		
Violas Lush	A lush sustain with strong vibrato played by a ten-player viola section.	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2
Violas Lush Mutes	Same as above played Sordino (with the mutes)	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2
Violas Pizzicato	Viola section played pizzicato. Velocity controls volume level and timbre changes (brighter at higher velocities)	Vel (vol), VAR 1, VAR 2, Length
Violas Short Bows KS	Viola section played short bow style Keyswitch for bow direction control: • D1 = automatically alternating bow strokes • D#1 = bow stroke 1 • E1 = bow stroke 2	Vel (vol), KS, Length, VAR 1, VAR 2
Violas Short Bows KS AG	Violas Short Bows instrument with more aggressive sound, controlled by velocity. Keyswitch for bow direction control: • D1 = automatically alternating bow strokes • D#1 = bow stroke 1 • E1 = bow stroke 2	Vel (vol), KS, Length, VAR 1, VAR 2, AG
Violas Sus+Short	Viola section strings that combine characteristics of both long and short bows into single instruments	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2
Violas Sus+Short AG	Violas Sustain + Short with more aggressive sound, controlled by the mod wheel controller or CC#1	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2, AG
Violas Sus+Short Mutes	Same as above played Sordino (with the mutes)	SusLeg, MW, Vel, Port,
Violas Tremolo	Viola section played tremolo	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2
Violas Trills Half	Viola section played half-step trills	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2
Violas Trills Whole	Viola section played whole-step trills	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2

THE STRING SECTION INSTRUMENTS		
ARIA name:	**Description:**	
VIOLA SECTION:		
Violas KS	A keyswitch instrument containing all Viola instruments • C1 = Sus+short (legato with sustain pedal) • C#1 = Sus+short mutes (legato with sustain pedal) • D1 = Automatically alternating up and downbows • D#1 = Upbows • E1 = Downbows • F1 = Pizzicato • F#1 = Tremolo mutes (legato with sustain pedal) • G1 = Tremolo (legato with sustain pedal) • G#1 = Half step trills mutes (legato with sustain pedal) • A1 = Half step trills (legato with sustain pedal) • A#1 = Whole step trills mutes (legato with sustain pedal) • B1 = Whole step trills (legato with sustain pedal)	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Alt, Length

THE STRING SECTION INSTRUMENTS		
ARIA name:	**Description:**	
CELLO SECTION:		
Cellos Lush	A lush sustain with strong vibrato played by an eight-player cello section.	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2
Cellos Lush Mutes	Same as above played Sordino (with the mutes)	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2
Cellos Pizzicato	Cello section played pizzicato. Velocity controls volume level and timbre changes (brighter at higher velocities)	Vel (vol), VAR 1, VAR 2, Length
Cellos Short Bows KS	Cello section played short bow style Keyswitch for bow direction control: • D0 = automatically alternating bow strokes • D#0 = bow stroke 1 • E0 = bow stroke 2	Vel (vol), KS, Length, VAR 1, VAR 2
Cellos Short Bows KS AG	Cellos Short Bows instrument with a more aggressive sound, controlled by velocity. Keyswitch for bow direction control: • D0 = automatically alternating bow strokes • D#0 = bow stroke 1 • E0 = bow stroke 2	Vel (vol), KS, Length, VAR 1, VAR 2, AG
Cellos Sus+Short	Cello section strings that combine characteristics of both long and short bows into single instruments	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2
Cellos Sus+Short AG	The Cellos Sustain+Short instrument with a more aggressive sound, controlled by the mod wheel controller CC#1	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2, AG
Cellos Sus+Short Mutes	Same as above played Sordino (with the mutes)	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2
Cellos Tremolo	Cello section played tremolo	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2
Cellos Trills Half	Cello section played half-step trills	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2
Cellos Trills Whole	Cello section played whole-step trills	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2

THE STRING SECTION INSTRUMENTS		
ARIA name:	**Description:**	
CELLO SECTION:		
Cellos KS	A keyswitch instrument containing all Cello instruments • C0 = Sus+short (legato with sustain pedal) • C#0 = Sus+short mutes (legato with sustain pedal) • D0 = Automatically alternating up and downbows • D#0 = Upbows • E0 = Downbows • F0 = Pizzicato • F#0 = Tremolo mutes (legato with sustain pedal) • G0 = Tremolo (legato with sustain pedal) • G#0 = Half step trills mutes (legato with sustain pedal) • A0 = Half step trills (legato with sustain pedal) • A#0 = Whole step trills mutes (legato with sustain pedal) • B0 = Whole step trills (legato with sustain pedal)	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Alt, Length

THE STRING SECTION INSTRUMENTS		
ARIA name:	**Description:**	
DOUBLE BASS SECTION:		
Basses Lush	A lush sustain with strong vibrato played by a seven-player double bass section.	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2
Basses Lush Mutes	Same as above played Sordino (with the mutes)	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2
Basses Pizzicato	Double Bass section played pizzicato. Velocity controls volume level and timbre changes (brighter at higher velocities)	Vel (vol), VAR 1, VAR 2, Length
Basses Short Bows KS	Double Bass section played short bow style Keyswitch for bow direction control: • D-1 = automatically alternating bow strokes • D#-1 = bow stroke 1 • E-1 = bow stroke 2	Vel (vol), KS, Length, VAR 1, VAR 2
Basses Short Bows KS AG	Basses Short Bows instrument with more aggressive sound, controlled by velocity. Keyswitch for bow direction control: • D-1 = automatically alternating bow strokes • D#-1 = bow stroke 1 • E-1 = bow stroke 2	Vel (vol), KS, Length, VAR 1, VAR 2, AG
Basses Sus+Short	Bass section strings that combine characteristics of both long and short bows into single instruments	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2
Basses Sus+Short AG	Basses Sustain+Short instrument with more aggressive sound, controlled by the mod wheel controller CC#1	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2, AG
Basses Sus+Short Mutes	Same as above played Sordino (with the mutes)	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2

THE STRING SECTION INSTRUMENTS		
ARIA name:	**Description:**	
DOUBLE BASS SECTION:		
Basses KS	A keyswitch instrument containing all Bass instruments • C-1 = Sustain • C#-1 = Sustain mute • D-1 = Automatically alternating • D#-1 = Upbows • E-1 = Downbows • F-1 = Pizzicato • F#-1 = Playable tremolo mute • G-1 = Playable tremolo	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Alt, Length
Basses Tremolo	Double Bass section played tremolo	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2

THE STRING SECTION INSTRUMENTS		
ARIA name:	**Description:**	
FULL STRING SECTION:		
Full Strings Pizz	Full String section played pizzicato. Velocity controls volume level and timbre changes (brighter at higher velocities)	Vel (vol), VAR 1, VAR 2, Length
Full Strings Short Bows KS	Full String section played short bow style Hidden keyswitch for bow direction control: • D-1 = automatically alternating bow strokes • D#-1 = bow stroke 1 • E-1 = bow stroke 2	Vel (vol), KS, Length, VAR 1, VAR 2
Full Strings Sus+Short	Full String section that combine characteristics of both long and short bows into single instruments	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2
Full Strings Sus+Short AG	Full Strings Sustain+Short instrument with more aggressive sound, controlled by the mod wheel controller CC#1	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2, AG
Full Strings Sus+Short Mutes	Same as above played Sordino (with the mutes)	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2
Full Strings KS	A keyswitch instrument containing all Full Strings instruments • C-1 = Sus+short (legato with sustain pedal) • C#-1 = Sus+short mutes (legato with sustain pedal) • D-1 = Automatically alternating up and downbows • D#-1 = Upbows • E-1 = Downbows • F-1 = Pizzicato • F#-1 = Tremolo mutes (legato with sustain pedal) • G-1 = Tremolo (legato with sustain pedal) • G#-1 = Half step trills mutes (legato with sustain pedal) • A-1 = Half step trills (legato with sustain pedal) • A#-1 = Whole step trills mutes (legato with sustain pedal) • B-1 = Whole step trills (legato with sustain pedal)	SusLeg, MW, Vel, Port, VAR 1, VAR 2, KS, Alt, Length
Full Strings Tremolo	Full Strings section played tremolo	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2

THE STRING SECTION INSTRUMENTS		
ARIA name:	**Description:**	
FULL STRING SECTION:		
Full Strings Trills Half	Full Strings section played half-step trills	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2
Full Strings Trills Whole	Full Strings section played whole-step trills	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2

THE CHOIR INSTRUMENTS		
ARIA name:	**Description:**	
CHOIR:		
Full Choir Lite KS	A full choir of soprano, alto tenor and bass sections combined. • C0 = Ahhs • D0= Oohs	SusLeg, MW, Vel, Port, Length, VAR 1, VAR 2, KS

Ensembles Files (Presets) - Load Ensemble Presets Easily

The GPO-ARIA installation includes a folder/directory called "Ensembles" that contains a collection of useful, pre-configured instrumental combinations for the convenience of the user. Loading an Ensemble can give you a quick "head start" to setting up a group of instruments. Each file loads a selection of instruments (e.g. String Quartet) along with pan, level, and other settings. The Ensembles folder can be found in this location: /Garritan/Personal Orchestra 4/Ensembles.

Loading Ensemble Files

There are several ways to load Ensemble preset files:

* Load from the Ensemble Manager in the upper left box of the ARIA interface.
* Drag and Drop or Load from the File menu (File/Load).

The Ensemble Manager slot is an easy way to load ensembles. When you click on the slot in the Ensemble Manager in the upper left corner of the ARIA interface, you will see a JABB drop-down, menu which will contail all of the Ensemble presets. Alternatively, you can open the "Ensembles" folder/directory to display the numbered collection of ensemble files. Using the mouse button, click and drag the file you wish to load. The instruments and their configurations will load automatically.

Note that in Standalone mode the supplied ensemble files can be customized and saved by the user. The user can also design and save custom ensemble files by loading the ARIA player with instruments; configuring level, pan, send, and other settings as desired; and saving them as ".aria" files in the File menu (File/Save As.)

ENSEMBLES	
Ensemble Name:	**Instruments Included:**
01 Woodwind Quintet	Flute Solo KS, Oboe 1 Modern Solo, Bb Clarinet Solo, Bassoon 1 Solo, French Horn 1 Solo
02 Woodwind Section One	Flute Solo KS, Oboe 3 Modern Solo, Bb Clarinet Solo, Bass Clarinet Solo, Bassoon 1 Solo,
03 Woodwind Section Two	Flute Solo KS, Oboe 1 Modern Solo, Oboe 2 Modern Solo, Bb Clarinet Plr1, Bb Clarinet Plr2, Bass Clarinet Solo, Bassoon 1 Solo, Bassoon 2 Solo,
04 Flute and Harp	Flute Solo KS, Harp 2 KS
05 Flute and Piano	Flute Solo KS, Steinway Piano
06 Brass Sections	French Horn 1 Plr1 KS, French Horn 1 Plr2 KS, French Horn 1 Plr3 KS, French Horn Overlay f, French Horn Overlay ff, Trumpet 1 Plr1 KS, Trumpet 1 Plr2 KS, Trumpet 1 Plr3 KS, Trumpet Overlay, Trombone Plr 1 KS, Trombone Plr 1 KS, Trombone Plr 3 KS, Bass Trombone 1 Solo, TBone Overlay, Tuba 1 Solo, Tuba Overalay
07 Aggressive Brass	French Horn 1 Solo AG, French Horn Overlay f AG, Trumpet 1 Solo AG, Trumpet Overlay AG, Trombone Solo AG, TBone Overlay AG, Tuba 2 Solo AG, Tuba Overlay AG
08 Large French Horn Section	French Horn 1 Plr1 KS, French Horn 1 Plr2 KS, French Horn 1 Plr3 KS, French Horn 2 Plr1, French Horn 2 Plr2, French Horn 2 Plr3, French Horn Overlay f, French Horn Overlay ff
09 Large Trumpet, Trombone & Tuba Sections	Trumpet 1 Plr1 KS, Trumpet 1 Plr2 KS, Trumpet 1 Plr3 KS, Trumpet Overlay, Trombone Plr1 KS, Trombone Plr2 KS, Trombone Plr3 KS, TBone Overlay, Tuba 1 Solo, Tuba 2 Solo, Tuba Overlay
10 Percussion Section	Bass Drum, Timpani KS, Snares KS, Cymbals, Percussion Toys KS, Xylophone KS, Glockenspiel KS, Celesta, Tubular Bells KS, Vibraphone (Standard Ped), Marimba KS
11 Harp Duo	Harp 1 KS, Harp 2 KS
12 Piano Duo	Steinway Piano Duo1, Steinway Piano Duo2
13 Piano Trio	Violin 1ano Solo KS, Cello 3 Solo KS, Steinway Piano
14 Honky Tonk Piano	Steinway Piano Duo1, Steinway Piano Duo2
15 Pipe Organ	Baroque Plenum Reed Pedal, Baroque Plenum Pedal, Baroque Plenum Reeds, Baroque Plenum, Brustwerk All Stops, Cornet, Flutes, Full Organ, Haupt Mix, Hauptwerk All Stops, Prinzipal, Scharf IV, Symphonic
16 String Quartet	Violin 1 Solo KS, Violin 2 Solo KS, Viola Solo KS, Cello 3 Solo KS
17. Brass Quintet	Trumpet 1 Solo KS, SAM Trumpet Solo KS, French Horn 1 Solo KS, Trombone Solo KS, SAM Tuba Solo KS
18 Chamber Orchestra	Violin 1 Solo KS, Violin 2 Solo KS, Violin 3 Plr1, Violin 3 Plr2, Violin 3 Plr3, Viola Plr1, Viola Plr2, Viola Pizz Solo, Cello 1 Solo KS, Cello 2 Solo KS, Cello 3 Solo KS, Double Bass Plr1, Double Bass Plr2, Double Bass Pizz Solo, French Horn 1 Solo KS, French Horn 2 Solo

ENSEMBLES	
19 String Sections	Violins 1 KS, Violins 2 KS, Violas KS, Cellos KS, Basses KS
20 String Sections-VlnL_R	Violins 1 KS, Violins 2 KS, Violas KS, Cellos KS, Basses KS
21 Aggressive String Sections	Violins 1 Sus+Short AG, Violins 1 Short Bows KS AG, Violins 2 Sus+Short AG, Violins 2 Short Bows KS AG, Violas Sus+Short AG, Violas Short Bows KS AG, Cellos Sus+Short AG, Cellos Short Bows KS AG, Basses Sus+Short AG, Basses Short Bows KS AG
22 Aggressive String Sections VlnL_R	Violins 1 Sus+Short AG, Violins 1 Short Bows KS AG, Violins 2 Sus+Short AG, Violins 2 Short Bows KS AG, Violas Sus+Short AG, Violas Short Bows KS AG, Cellos Sus+Short AG, Cellos Short Bows KS AG, Basses Sus+Short AG, Basses Short Bows KS AG
23 All String Sections & Solos	Violins 1 KS, Violins 2 KS, Violin 1 Solo KS, Violin 2 Solo KS, Violin 3 Solo KS, Violas KS, Viola 1 Solo KS, Cellos KS, Cello 1 Solo KS, Cello 2 Solo KS, Cello 3 Solo KS, Basses KS, Double Bass 1 Solo KS
24 All String Sections & Solos - VlnL_R	Violins 1 KS, Violins 2 KS, Violin 1 Solo KS, Violin 2 Solo KS, Violin 3 Solo KS, Violas KS, Viola 1 Solo KS, Cellos KS, Cello 1 Solo KS, Cello 2 Solo KS, Cello 3 Solo KS, Basses KS, Double Bass 1 Solo KS
25 Lush Strings	Violins 1 Lush, Violins 1 Lush Mutes, Violins 2 Lush, Violins 2 Lush Mutes, Violas Lush, Violas Lush Mutes, Cellos Lush, Cellos Lush Mutes, Basses Lush, Basses Lush Mutes
26 Lush Strings - VlnL_R	Violins 1 Lush, Violins 1 Lush Mutes, Violins 2 Lush, Violins 2 Lush Mutes, Violas Lush, Violas Lush Mutes, Cellos Lush, Cellos Lush Mutes, Basses Lush, Basses Lush Mutes
27 Strings, Harp, Perc	Violins 1 KS, Violins 2 KS, Violin 3 Solo KS, Violas KS, Viola Solo KS, Cellos KS, Cello 3 Solo KS, Basses KS, Double Bass Solo KS, Harp 2 KS, Basic Orch Percussion, Percussion Toys KS
28 Strings, Harp, Perc - VlnL_R	Violins 1 KS, Violins 2 KS, Violin 3 Solo KS, Violas KS, Viola Solo KS, Cellos KS, Cello 3 Solo KS, Basses KS, Double Bass Solo KS, Harp 2 KS, Basic Orch Percussion, Percussion Toys KS

Note:

Strings that are identified with "VlnL_R" in the file name offer an alternative seating arrangement that places 1st violins on the left and 2nd Violins on the right.

CODA

Conclusion

We have presented a general picture of Personal Orchestra in this guide. We have outlined how to install and use the ARIA player, the various instruments, controls and other salient information.

You now have a virtual orchestra at your fingertips. The next move is up to you.

We cordially invite you to share the music you make with Garritan Personal Orchestra with us and with others. Feel free to post your orchestral work on our forum or submit it for inclusion in our demo pages.

May you make wonderful music!

Getting Help

The first place to look for a solution to any problem you may be experiencing is in this manual. Please read the manual before contacting support. Next, check the readme files (if any) which contain important information and all last-minute changes that haven't been available when creating this guide. Whenever you encounter problems, you should also check if you have installed the latest updates. The version number of your software is displayed in the Settings tab. Updates are released regularly to fix known problems and to improve the software.

Selecting the "Get Help" button in the "Settings" tab will link directly to the Garritan Support site. The front-end will ask you for all information about your hardware and software environment, to better assist you. In your description, you should include a description of the problem, the steps you have taken to try to remedy the problem, the specs of your computer, and a description of your software and hardware.

If there is a severe technical issue (crash, empty UI), please go the "Report Technical Issue". For Windows the link is in the Start Menu, and for Mac users you can find the ARIA Reporter in the Garritan folder. The ARIA Reporter will create a log on your desktop. Please attach the log to an e-mail and send it to us. That will help us identify the issue so we can get back to you.

If you can't find a solution to your problem by any of the above methods, please email us at support@garritan.com. The best way to get the help you need is by giving us plenty of detailed information about the problem you are having. We do ask you to read this guide thoroughly and exhaust the other avenues of support before contacting us.

Regarding Third-Party Customer Service: Please do not call Garritan for technical support regarding any third-party application. Please contact the respective companies for support.

For the Latest… Garritan Personal Orchestra is a dynamic library that is evolving and growing. Please check the support area of our website at **www.garritan.com** for the latest up-to-date information, troubleshooting, FAQs, helpful hints and tutorials. Another resource is the support forums where you can discuss problems directly with other users and with experts from Garritan moderating the forum.

The Garritan Community

Learn, Share Music, and Stay up to date

I invite you to join the Garritan Community.

Owning Garritan Personal Orchestra 4 gives you much more than a product. One of the most valuable benefits is membership into the Garritan community of musicians.

The Garritan Forum is where Garritan users from around the world come to discuss everything related to soundware and music. It's the perfect way to find the latest news and announcements, ask questions, and share your music made with the Garritan Personal Orchestra. If you want to browse, share your music, share your thoughts about the sounds, impart knowledge, listen to demos, learn, and interact with other users—this is the place! You can also communicate privately with other musicians, respond to polls, participate in real-time chats, read how-to tutorials, and receive support and help from others. There is a wealth of information among the tens of thousands of posts in the forum and a convenient 'search' feature to find what you are looking for.

The Garritan forum can be accessed at: **http://www.garritan.com/forum.html**

You don't have to register to browse posts, but before you can post, you will have to sign up. Registration is fast, simple and absolutely free so please, join our community today! In addition to the official Garritan Forum, there are other independent Garritan Communities where you can find valuable information and interact with other users. I urge you to contribute and be a part of the Garritan Community where you will find an indispensable resource for musicians.

Acknowledgments

Producing the Garritan Personal Orchestra would not have been possible without the combined help, talent, and support of many extraordinary people. I am grateful to those who have contributed and would like to thank them all.

I especially wish to thank Tom Hopkins for transforming these samples into a masterpiece. This library would not have been possible without Tom's programming magic. Again Tom has done miracles.

I am extremely grateful to the musicians from the US, Canada, the UK, New Zealand and the Czech Republic who have played for this collection. I wish space permitted to list you all. Thanks for enduring the endless scales, sore fingers, and numb lips.

Thanks to Pauline Kim for her performance on the Stradivari violin. Thanks to the University of British Columbia and McGill University for providing some of the facilities and sounds used in this collection. Special thanks go to Joyce Hinton, Director at the Chan Center for the Performing Arts and to David Simpson, Director of Recording & Audio University of British Columbia. I am grateful to Frank Opolko and Joel Wapnick of the McGill University Faculty of Music for their invaluable help and for paving the way. They are the pioneers in chromatic orchestral sampling. Thanks to Jim Bredouw for the use of this Steinway. Thanks to Petr Pololanik for conducting instrumentalists in the Czech Republic and for his advice and insights. And thanks Crispin Hands for conducting in Vancouver. I wish to acknowledge Paul Gilreath, author of The Guide to MIDI Orchestration, for providing valuable insights.

The custom-made ARIA sample engine for Personal Orchestra was developed by David Viens of Plogue Art et Technologie Inc. David Viens and his team took up the task brilliantly, and brought forth the super-charged and technologically stunning Aria sample engine used for this project. Thanks also to Sebastien Beaulieu, Eric Patenaude, and Pascal Maheux for assisting with the development of the engine. And a special thanks to Max Deland for managing this huge project. I wish to thank Magnus Jonsson for providing a special edition of Ambience reverb. Thanks to Maarten Spruijt, Vincent Beijer and Marco Deegenaars, from Project SAM for the oputstanding brass samples.

A special thanks goes to Jeff Hurchalla. And hats off to the League of Extraordinary Beta-testers. I wish to thank Prof. Jim Williams, Dan Kury, Bill DeWitt, Jack Cannon, Robert Davis, David Sosnowski, Pat Azzarello, Jim Ortner, Trond Bjornard Ph.D., Rick Schneblin, Randy Bowser, Jeremy & Julian Soule, Houston Haynes, Mike Moscariello, Kevin Gates, Danny Williams, Peter O'Regan, Francesco Marchetti, Colton Provias, Sean Hannifan and Alan Belkin. And thanks to James Mireau for the fantastic GUI work for ARIA and graphics. Thanks Crispin and Jeremy Soule for your help and friendship. Thanks to Frank Spitznagel for his diligent work and efforts that laid the cornerstone for developing this library.

Thanks to Mark Simon and David Burnett, for providing Northern Sounds Forums to exchange ideas and support one another. I would also like to thank Stephen Croes, Dean of Music Technology, and Kurt Biederwolf, Chair of the Music Synthesis Department at Berklee College of Music. Stephen and Kurt were very helpful in discussing many of the problems facing music students which led to the development of this library as a creative solution for students. Many thanks to Steinway & Sons. And a special thank you to Wendy Carlos.

ADDENDUM

Appendix A:

Quick MIDI Controller Reference Guide for Personal Orchestra

CC #	Description	Use	Instruments Affected
1	Modulation	Controls the volume/ timbre of "expressive" instruments.	All "Expressive" sustained instruments. Does not affect most percussion, keyed, harp, short bow, or pizzicato string instruments.
2	Breath	Alternate controller for volume/timbre of "expressive" instruments.	Mirrors cc#1. All "Expressive" sustained instruments. Does not affect most percussion, keyed, harp, short bow, or pizzicato string instruments.
7	Volume	Turned off by default.	Volume controller CC# 7 used for static volume changes (in contrast to modulation control CC #1 which is used for dynamic volume/timbre changes). You must activate it in the ARIA player options panel.
10	Pan	Turned off by default.	Since all the instruments in Personal Orchestra are pre-panned based on their place in the orchestra, this is turned off by default. If you wish Personal Orchestra to respond to automated panning adjustments sent by your controller or sequencer you must turn this option on in the ARIA player options panel.
11	MIDI Expression	Alternate controller for volume/timbre of "expressive" instruments.	Mirrors cc#1. All "Expressive" sustained instruments. Does not affect most percussion, keyed, harp, short bow, or pizzicato string instruments.
15	Hidden Trills Interval Controller (KS solo strings)	Controls the interval of the trills when using the Solo String KS patches.	All Solo String KS patches. This controller gives an alternate way of choosing the interval with an extended range (beyond the keyswitches.) Values as they relate to trill intervals: 0-32 = half step 33-64 = whole step 65=96 = minor third 97-127 = major third
16	Aggressive Controller (strings/ brass as well as bass drum)	Controls bow noise, high frequency content, and saturation	This controller also adjusts bow noise in the aggressive string patches as well as a more forceful sound to the aggressive brass and bass drum patches. Can be used to add more forcefulness and 'grit' to these patches' sound.

CC #	Description	Use	Instruments Affected
17	Vibrato Speed Controller (solo woodwinds and brass)	Used to control vibrato speed on affected solo woodwind and brass instruments.	Used to control vibrato speed with certain solo woodwinds and brass instruments, even ones, like French horn and clarinet, which do not normally use vibrato in standard practice. Note: This only affects Non-Vibrato (NV) patches. This controller does not affect true vibrato instruments. Note: Aftertouch controls vibrato intensity in these instruments.
19	Hidden Portamento Aid – pitchbend disabled layer	Defeats pitchbend so that pitchbend data can be used effectively between abutted or overlapped sustain pedal up notes where standard portamento (cc#20) will not function.	All stringed instruments, as well as the trombone. Used during passages that move from detache to slurred/legato phrasing.
20	Portamento	Adds portamento to notes depending on interval and controller data added.	All "Expressive" sustained instruments. Used during legato/slurred passages. Only works in legato mode (sustain pedal down.)
	Bass Drum Fundamental Shown: BDFUND	Controls the strength of the lowest frequencies.	Adds low frequency strength to the Bass Drum as well as most Organ patches.
	Attack Speed Shown: ATTACK (vibraphone only)	Continually adjustable attack speed controller. Adjustable from hard to 'bowed' attacks.	Adjustable attack speed controller on the vibraphone KS patch.
21	Length	Controls the decay/release time of the sample.	Controls the decay/release time of most instruments in Personal Orchestra. Especially useful with the Short Bow instruments to give shorter bow strokes. This is also useful for legato string section passages to smooth transitions with higher values. Can be applied to help create double and triple tonguing in the brass.
22	Variability 1 (VAR 1)	Sets random variations in tuning from note to note.	On most wind, string, and some percussion instruments, this is used to introduce note-to-note variations in intonation. Used during repeated note passages to help prevent the 'machine gun' effect.
	Frequency Filtering Shown: FILTLV (organ)	Controls filter strength.	For all Organ patches this is used for filter strength, this control is to be used along with CC# 23.
	Tremolo Level Shown: TRMLEV (vibraphone)	Continuously variable tremolo control.	When used with Personal Orchestra's vibraphone, controls the tremolo level. To be used with CC# 23.

CC #	Description	Use	Instruments Affected
23	Variability 2 (VAR 2)	Sets random variations in instrument timbre from note to note.	On most wind, string, and some percussion instruments, this is used for timbre variations. Again, useful for repeated note passages to prevent the 'machine gun' effect.
	Filter Center Frequency Shown: FILTFQ Filtering (organ)	Also used to control the center frequency for filtering.	For all Organ patches this is used to control the center frequency of the filter. Used along with CC# 22.
	Tremolo Speed Shown: TRMSPD (vibraphone)	Continuously variable tremolo speed control.	For vibraphone, this controller is used to control the tremolo speed. To be used with CC# 22 to control tremolo levels and speed.
64	Sustain/Legato Damping (percussion)	Controls legato switching, damping, and standard sustain.	Controls legato mode on all sustained string, brass, and woodwind instruments. Will also control damping on those percussion instruments that use this function and has standard sustain pedal behavior on instruments like the piano, celesta, some vibraphone choices, harpsichord, and glass armonica. Note: Legato mode can also be accomplished by using the Auto-legato feature.
Aftertouch	Hidden Vibrato Intensity Controller	Controls vibrato intensity for affected woodwind and brass solo patches.	Used to control vibrato intensity with certain solo woodwinds and brass instruments, even ones, like French horn and clarinet, which do not normally use vibrato in standard practice. Note: Only affects Non-Vibrato (NV) patches. This controller does not affect instruments actually recorded with vibrato. Some controller keyboards (e.g. M-Audio) allow the user to assign cc#131 to the function of aftertouch. The keyboard will output Aftertouch data when a slider assigned to cc#131 is moved.
Velocity	Velocity	Controls "note on" velocity for all instruments in Personal Orchestra.	Controls the initial attack strength of all "Expressive" mod wheel controlled instruments in Personal Orchestra. Note: For all "Percussive" (keyed, percussion, or non sustained patches) this controls volume/timbre.
Pitch Bend	Pitch Bend	Allows a note's pitch to be shifted in a controlled manner (usually to a maximum of two semitones up or down).	This controller is useful for instruments like strings and trombone where note slides are common. This controller is used to create 'scoops' or 'drops' at the beginning or end of a note or passage. Can be used with trombone to simulate slide movements during sustained notes. Can be used along with cc#19 to solve difficult portamento situations.

Downloadable Sounds

Get More Sounds Instantly and Easily

It will soon be possible to download sounds quickly and easily to expand your palette of. Simply go to the "Settings" tab in the ARIA Player and click on the "Get More Sounds" button. You'll be taken to the Garritan Download shop when you will be able to download additional sounds or order complete libraries.

Please be sure to check the Authorized Steinway Virtual Concert Grand, Jazz & Big Band, Concert & Marching Band, World Instruments and other new soundware products. There will also be special upgrade pricing to Project Sam Brass Classic at the www.project sam.com website.

For information on all the Garritan libraries and upcoming new products, visit our website at:
www.garritan.com

More Products from Garritan

Authorized Steinway Virtual Concert Grand Piano
Jazz & Big Band
Concert & Marching Band
World Instruments (upcoming)
Pipe Organs (upcoming)
Orchestral Strings (upcoming)
Reason Refills and Microsoft Songsmith Packs

Free Interactive Orchestration Course!

Open To All Without Charge.

We are pleased to make available to you to the Interactive Edition of "Principles of Orchestration" based upon Nikolay Rimsky-Korsakov's celebrated text.

With Garritan Personal Orchestra you now have a fine orchestra at your fingertips. A well-crafted orchestration is a thing of beauty and it is important for a well-rounded musician to possess a basic knowledge of orchestration. As with composing or arranging for a real orchestra, knowledge and experience is essential for producing successful results.

One of the the most effective ways to learn orchestration is by listening, and simultaneously seeing it on the score. Live playback of the score examples imparts an added dimension, converying concepts far more clearly and immediately than simply viewing what's on a printed page.

In this Interactive Edition we have provided exactly that facility: score excerpts which allow the learner to simultaneously listen and visually follow. There are some 275 animated scores that are embedded within the relevant portions of the text.

The ability to hear various orchestral realizations of the different examples from Rimsky-Korsakov's works, on-demand, is invaluable; and books alone cannot provide this level of instruction.

To get started, go to the www.garritan.com website and follow the links to the course.

This course is completely free and can be an invaluable resource as your embark on your musical journey.

www.americanmusical.com

WWW.GARRITAN.COM